JANUARY, 1940

# Medical Times

The Journal of the
American Medical Profession



Biliary Tract Surgery • Diabetic Coma

Occipitoposterior Dystocia

Precancerous Anal Lesions

Vertebral Compression Fractures

Iodine Test for Cervical Cancer

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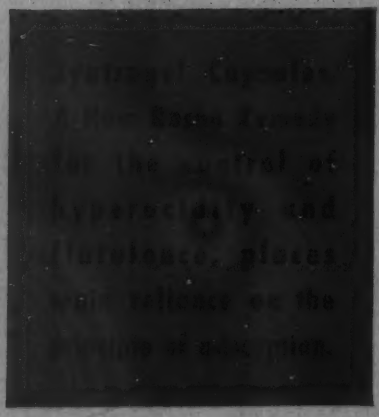
Medical Book News Editorials

Contemporary Progress

Vol. 68 No. 1

*Romaine Pierson Publishers, Inc., 34 N. Crystal St., East Stroudsburg, Pa., 95 Nassau St., New York, N. Y.*


# Adsorption of Acid *vs.* Alkalinization



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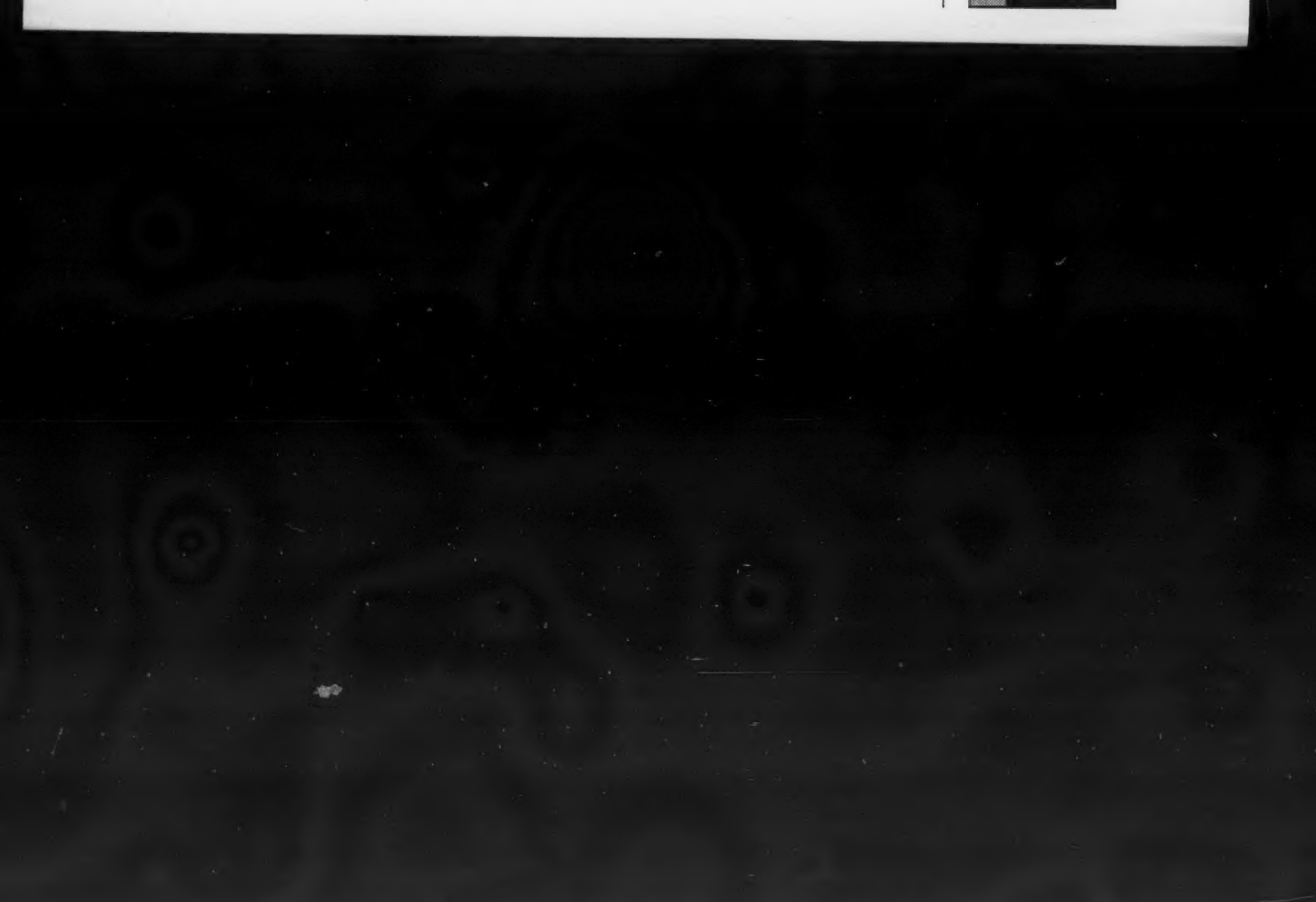

# Medical Times

The Journal of the American Medical Profession

VOL. 68 MEDICAL TIMES • JANUARY, 1940 NO. 1



*Incorporating the*

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WESTERN MEDICAL TIMES

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MANY chemical compounds possess highly efficient germicidal action, yet are toxic, even destructive, to tissues. Relative freedom from tissue-toxicity is therefore of major importance in selecting an antiseptic for clinical use on or within the body.

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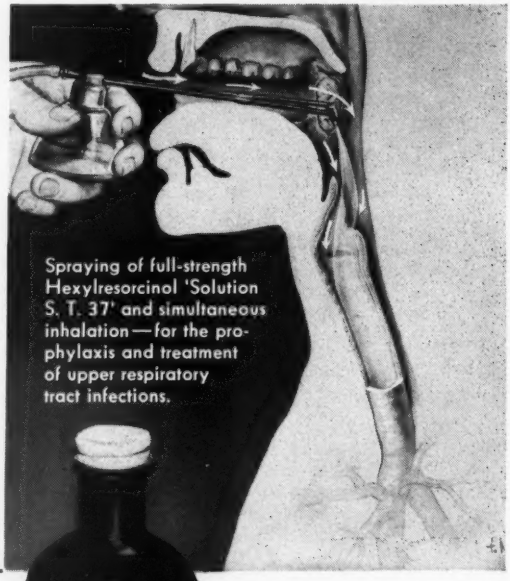


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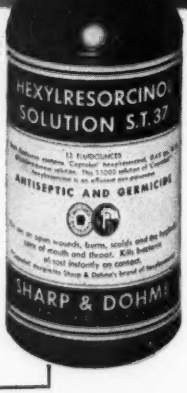


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1. J. Bact. Vol. 36, No. 3, p. 264, Sept. '38

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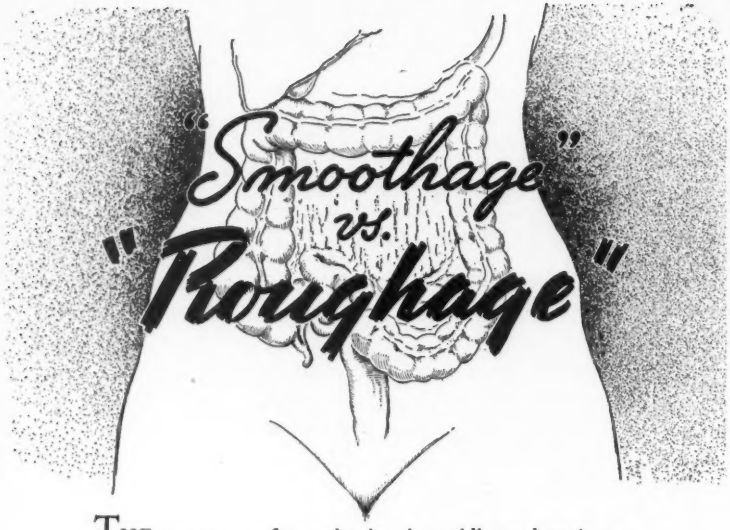


THE treatment of constipation is rapidly undergoing an evolutionary change in the light of newer knowledge and developments.

A few years ago, dietary fads included the use of "roughage" to whip the bowel into action. It was soon found, however, that the irritation produced by "roughage" was as deleterious as that resulting from irritant laxatives and cathartics.

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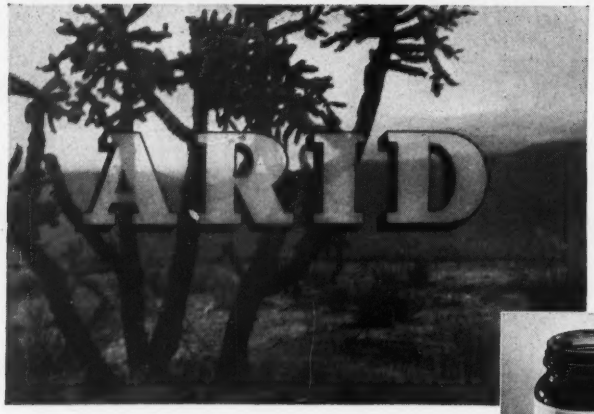



Dry, dehydrated fecal masses are typical of the resistant cases of constipation. For those cases where the mild stimulation of bulk alone is unavailing—such as are encountered in pregnancy and senility—the Stearns Laboratories present

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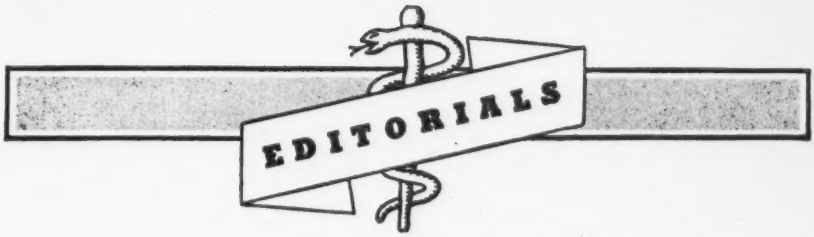



### *A Proposed Nobel Award That We Don't Need*

WRITING in the December *Scientific Monthly*, Professor Robert E. Burk of the Graduate School of Western Reserve University remarks that "Medical research is bound to make further strides. Industrial medical research has grown rapidly in such laboratories as Abbott, Lilly, Squibb, Parke-Davis, etc. Since the public wish to be cured and are quite willing to pay for being cured, I should not be surprised to see a very large growth of medical knowledge emanating from such laboratories. Less research is carried out on making the human machine run properly than on making automobiles run properly, yet surely automobiles are less important than human beings. The obvious difference is that research on automobiles and their fuels and lubricants is commercialized—I should say decently so—while medical research has been to a considerable degree restricted by what their authorities consider to be ethical taboos against commercialization. I hope it will be possible for academic medical research to be so related to the industrial medical research that it will not be eclipsed and can be adequately financed. As a subject for a future Nobel award in biochemistry I should like to suggest a pill which would soften the emotion of jealousy."

Here is wholesome competition in operation—between the forces of academic medical research and those of the enterprising manufacturers. It seems to us that they complement and supplement each other. Something will be wrong if Professor Burk's jealousy pill shall ever come to be needed.

### *Medicine and War*

WILL medicine yet achieve control over disease factors in the course of war?

The *Journal of the American Medical Association*, in its issue of September 23, 1939, cited editorially past termination of wars by epidemic disease. It instanced the defeat of the Persians under Xerxes by plague and dysentery, rather than by the Greeks; the capture of Prague by the French because of a typhus epidemic among the Austrians; and the failure of Napoleon's Russian campaign because of typhoid, typhus and pneumonia.

Disease, according to the same editorial, overshadowed the casualties of the fighting in the Mexican War of 1846-1847, in the course of which 10,986 died of typhoid, dysentery, smallpox, malaria and tropical diseases, while only 1,549 were killed or died of wounds; in the Civil War disease struck down 200,000 men and battle wounds 112,000; in the Spanish-American War 4,995 died from disease and 379 from injury; the World War saw 58,119 dying from disease and 50,385 from injury.

It seems fair to conclude that if man is capable of reaching the point where he will become master of wartime disease factors he will at the same time reach the point at which he will dispense with wars. This presumes great growth in intelligence, culture and character.

### *"But, Doctor, Do You Know Who I Am?"*

THE fact that a book appears with such a title as The Patient as a Person (G. Canby Robinson, M.D., The Commonwealth Fund, 1939) is fraught with significance, especially in these days when determined efforts are being made

to degrade and destroy the dignity of human personality.

Not so many years ago it was a bit difficult to interest the doctors in social service, which is the theme of Dr. Robinson's book. The writer can recall a surgeon's annoyed disavowal of any particular interest in or responsibility for the social fate of a patient discharged from a certain hospital. Much less was there awareness of adverse social conditions as causally related to illness. Somehow or other such a point of view was held to be subversive. A permanently underprivileged status for vast groups, both as regarded subsistence and the satisfactions of life, was thought of as inevitable and even desirable. We have those groups still with us, but our point of view with respect to them is changing along with the social metamorphosis now under way.

Since many illnesses rest upon these non-medical factors it becomes necessary for the hospital to investigate the latter; hence social service. The educational value to the medical profession of this approach is very great. We at least learn to see clearly why our efforts to help the sick or to prevent illness are frequently so futile. This will be well worth while, in time. Just now, we are on a new sociological frontier.

Today, medicine is in unison with religion with respect to the value of human personality. To the totalitarian ideology they are philosophically opposed.

The ward patient who, in a story told with insight by Dr. Tasker Howard, anxiously inquired of the doctor who was casually dealing with her, "But Doctor, do you know who I am?" was speaking for every human individual.

### *The Humble Automobile Jack Acquires Dignity*

THE successful surgical use of the automobile jack, as described by Dr. Otho C. Hudson in his article in this issue on compression fractures of the bodies of the dorsal and lumbar vertebrae, makes us think that here is the ultimate in appropriateness—the ingenious use of an automobile accessory to correct an automobile injury. This is the least that the modern Juggernaut can offer by way of amends for the barbarous swath that it cuts on our traffic-glutted highways.

### *Sex Takes a Beating*

FROM the studies of Lewis M. Terman and his associates (Psychological Factors in Marital Happiness, McGraw-Hill Book Company, 1938), it appears that sex technics bear little relation to marital happiness. Sexual compatibility does not determine contentment in marriage. Its influence is no greater—perhaps even less—than that of the combined personality and background factors.

This conclusion would tend to confirm the belief of some observers that middle class people, at least, are less strongly sexed today than formerly. There is an actual biologic deterioration which accounts, in part, for the findings of Berman and his colleagues and which also accounts, in part, for the falling birth rate among the bourgeoisie (commonly ascribed to contraception).

Happiness in marriage, therefore, in so far as sexual interests are concerned, is more attainable today because sex life deprivation means less and is easily tolerated, just as tolerance in general is governed largely by the degree of one's capacity for passionate embracement, say, of a basic and organized faith. It is not the defective in "spiritual" things who fanatically persecutes "heretics."

# SURGERY OF THE *Biliary Tract*

CARL A. BACHHUBER, M.D., F.A.C.S.

Los Angeles, California

THIS survey covers the surgery done on the biliary tract at the Los Angeles General Hospital between January 1st, 1933, and January 1st, 1938. During this five-year period, a total of 704 operations were performed, with 94 deaths, a general mortality of 13.35 per cent.

Discarding all benign and malignant tumors of both the pancreas and biliary tract, as well as all cases in which the surgery of the gallbladder and ducts was of a secondary nature, discloses a total of 630 primary operations, with 54 deaths, or a corrected mortality of 8.41 per cent.

Since a number of writers[1,2,3,4,5] classify the patients in whom duct surgery was done in a separate category, a further correction as to mortality has been made. Thus, there was a total of 64 operations in which the ducts were explored, with 13 deaths occurring. The final correction therefore was 566 ectomies and ostomies, with 40 deaths, or a mortality of 7.06 per cent.

*Age Groups*

THERE is nothing remarkable about the age groups as a whole except that they compare favorably with others published[1,6,7,8,9], the greatest incidence being between 30 to 39 years of age. However, in breaking the group into its component parts, it will be noted that the male seeks surgical relief at a later date than does the female. As will be shown later, the male mortality is approximately twice that of the female and it raises the question as to whether or not this may be a factor (Table I).

From the Surgical Service of the Los Angeles General Hospital and the Department of Surgery, College of Medical Evangelists.

*Hospital Days*

THE average preoperative stay in the hospital for ectomies was 10.57 days, the male being in a trifle longer (10.63 days) than the female (10.51 days). In the ostomy group, however, there is quite a difference in that the female remained 9.74 days compared to 5.26 days for the male. Since it is almost a universal policy at this hospital not to operate or interfere in the acute stage unless the patient becomes progressively worse, one is justified in deducing that the male's resistive power is lower than that of the female, or else he seeks medical care at a later date.

The average postoperative stay for the ectomies was 20.43 days, 18.11 days for female and 22.75 days for the male, or 4.64 days longer. The same difference is also shown in the ostomy group, the average stay being 27.26 days, 24.58 days for the female and 29.95 days, or 5.37 days longer, for the male.

The average total stay for the ectomies was 31 days, 28.62 days for female and 33.38 days for the male. In the ostomy group, the average stay was 34.76 days, 34.21 for female and 35.21 days, or 1 day longer, for the male. The slight difference here is due to the fact that the male was operated 4.48 days earlier than the female (Table II).

*Operations and Mortality*

OF the total of 630 operations, 556 (88.25 per cent) were ectomies and 74 (11.75 per cent) were ostomies. Of the ectomies, 439 (78.95 per cent) were females and 117 (21.05 per cent) were males, or a proportion 3.75 to 1. Of the

**Table I**

| | | 10-19 | 20-29 | 30-39 | 40-49 | 50-59 | 60-69 | 70-79 | Youngest | Oldest |
|---|---|---|---|---|---|---|---|---|---|---|
| *Ect.* | *F* | 2 | 49 | 145 | 111 | 94 | 34 | 4 | 17 | 77 |
| | *M* | 0 | 8 | 19 | 36 | 27 | 25 | 2 | 24 | 76 |
| *Ost.* | *F* | 1 | 7 | 13 | 10 | 10 | 8 | 3 | 17 | 75 |
| | *M* | 0 | 2 | 1 | 5 | 8 | 3 | 3 | 24 | 76 |
| | *Total* | 3 | 66 | 178 | 162 | 139 | 70 | 12 | | |

Age Groups.....Total 630 Cases

**Table II**

*Pre and Postoperative Hospital Days*

| | | Preop. | Average | Postop. | Average | Total | Over Total |
|---|---|---|---|---|---|---|---|
| *Ect.* | *F* | 10.51 | | 18.11 | | 28.62 | |
| | *M* | 10.63 | 10.57 | 22.75 | 20.43 | 33 38 | 31.00 |
| *Ost.* | *F* | 9.74 | | 24.58 | | 34.21 | |
| | *M* | 5.26 | 7.50 | 29.95 | 27.26 | 35.21 | 34.76 |

ostomies, 52 (70.27 per cent) were females and 22 (29.73 per cent) males or 2.36 to 1.

Deleting the duct group, which will be considered separately, left a total of 449 ectomies, with 32 deaths, a mortality of 6.41 per cent, and 67 ostomies, with 8 deaths, or a mortality of 11.94 per cent. Segregating the ectomy deaths according to sex shows a mortality of 5.08 per cent for the female and 11.32 per cent for the male. Segregating the ostomy group according to sex shows a mortality of 6.52 per cent for female and 23.81 per cent for the male. This definitely shows that the male is a decidedly poorer risk than the female (Table III).

*Pathology of the Ectomies*

SINCE it is almost a universal policy at this hospital to operate all gallbladder patients only after the subsidence of the acute symptoms if possible, the pathologic report tends to show that it must be difficult to determine when the inflammatory process subsides. All clinical signs might point to quiescence of the process yet the pathologic examination would reveal an acute or subacute inflammatory process still present. This would tend to substantiate the fact that the clinical symptoms are not always in accord with the pathologic findings. Thus, out of 556 ectomies in which the clinical signs had subsided, a total of 30.39 per cent still showed acute or subacute inflammation when examined by the pathologist (Table IV).

**Table III**

*Ect. and Ost. With Mortality*

| | | No. | Percentage | Deaths | Mortality | Average Ect. Mort. | Average Ost. Mort. |
|---|---|---|---|---|---|---|---|
| *Ect.* | *F* | 393 | 78.75 plus | 20 | 5.08 | | |
| | *M* | 106 | 21.24 plus | 12 | 11.32 | 6.41% | |
| *Ost.* | *F* | 46 | 68.65 plus | 3 | 6.52 | | |
| | *M* | 21 | 31.34 plus | 5 | 23.81 | | 11.94% |

**Table IV**

*Pathologist's Report*

| | Chr | MCh | SA | MSA | A | Par | Ulc | Gang | Perf | Chol | Emp | Hydrops | GB | No Report | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ect. F | 260 | 34 | 76 | 4 | 13 | 5 | 24 | 2 | 2 | 4 | 0 | 0 | 1 | 13 | 439 |
| M | 57 | 7 | 19 | 4 | 8 | 0 | 10 | 1 | 1 | 0 | 1 | 1 | 1 | 7 | 117 |

**Table V**

*Calculous & Non-Calculous Cholecystitis*

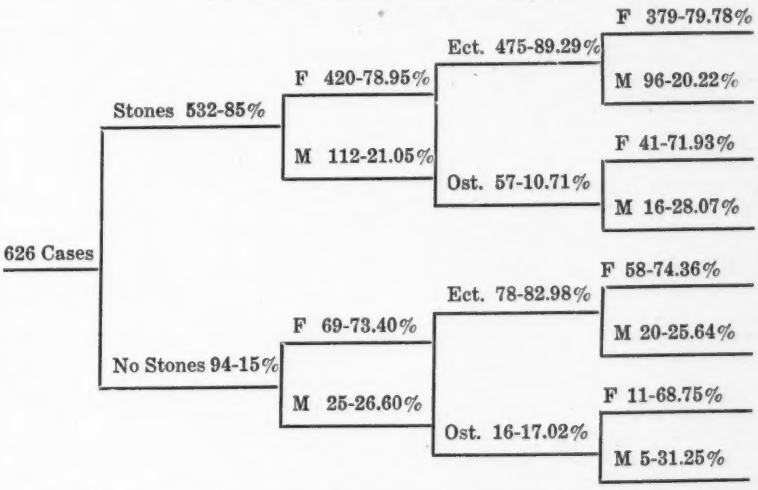
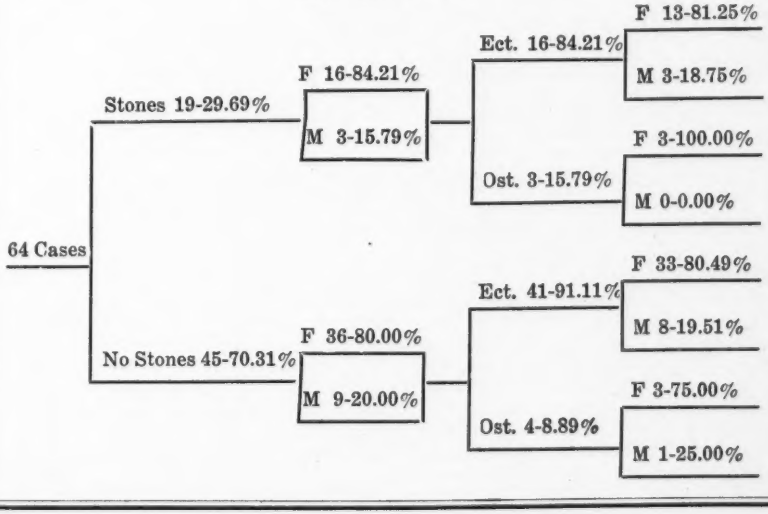



**Table VI**

*Exploration of Ducts*



*Calculous and Non-calculous Cholecystitis*

OF 626 reported operations, 532 (35 per cent) had stones and 94 (15 per cent) were in the non-calculous group. Of the calculous group, 78.17 per cent were female and 21.83 per cent male. Of the non-calculous group, 73.39 per cent were female and 26.61 per cent male (Table V).

*Duct Surgery*

FOR comparative purposes, those cases having had common and hepatic duct surgery must be classified within a separate group. The ducts were explored in 64 (9.48 per cent) cases out of a total of 630 operations, with 13 deaths resulting or a mortality of 20.31 per cent. Dividing the mortality group into calculous and non-calculous reveals a 4.69 per cent mortality in the non-calculous group and 55.55 per cent in the calculous group. Apparently those in the calculous group must have been much poorer risks (Table VI).

*Appendectomies*

THERE were 110 incidental appendectomies with ectomies, with 2 deaths, or 1.8 per cent. This would lead one to believe that an appendectomy carries with it no additional risk. However, appendectomy accompanied 9 ostomies, resulting in 4 deaths, or a mortality of 44.44 per cent. Apparently an appendec-

**Table VII**

| | | Number | Total |
|---|---|---|---|
| *I Bacterial* | | | |
| | *A. Abdominal* | | |
| | 1. Pyemic abscess of liver | 1 | |
| | 2. Acute cholecystitis | 1 | |
| | 3. Common duct stone | 1 | |
| *45.23%* | 4. Retrocolic abscess | 1 | 13 |
| | 5. Peritonitis | 6 | |
| | 6. Abscess of abdominal wall | 1 | |
| | 7. Subphrenic abscess | 2 | |
| | *B. Thoracic* | | |
| | 1. Bronchopneumonia | 4 | |
| | 2. Bronchitis TB | 1 | 6 |
| | 3. Atelectasis | 1 | |
| *II Accidental* | | | |
| | 1. Hemorrhage | 2 | |
| | 2. Portal vein thrombosis | 1 | |
| | 3. Cut hepatic duct | 1 | |
| | 4. Ligation of portal vein & hepatic artery | 1 | |
| | 5. Aspiration pneumonia | 1 | |
| *33.33%* | 6. Eventration | 1 | 14 |
| | 7. Perforative— | | |
| | A. Colon & pylorus | 1 | |
| | B. Colon & duodenum | 1 | |
| | C. Duodenum | 1 | |
| | 8. Ruptured cystic duct | 1 | |
| | 9. Pyloric obstruction | 1 | |
| *III Degenerative diseases* | | | |
| | A. Hypertensive heart disease | 2 | |
| *7.14%* | B. Uremia | 1 | 3 |
| *IV Neurocirculatory* | | | |
| | A. Gastric dilatation | 2 | |
| *9.28%* | B. Shock | 1 | 4 |
| | C. Paralytic ileus | 1 | |
| *V Hepatic* | | | |
| | A. Hepatic degeneration | 1 | |
| *4.76%* | B. Hepatic insufficiency | 1 | 2 |

tomy in the face of an acute cholecystitis, for which ostomy was done, carries with it a tremendous mortality.

*Re-operations*

THERE were 33 patients who had previously had an ostomy and returned for further surgery, 8 of them having had their primary surgery at the General Hospital. Four patients were re-operated for a persistent fistula, all being due to overlooked gallbladder stones.

*Deaths*

THERE were 42 deaths from ectomies and an attempt has been made to classify them in 5 groups. While it is realized that this classification is far from ideal, it is an attempt at segregation and discussion can easily be referred to a particular group (Table VII).

It will be noted that the greatest improvement in mortality can be attained in the accidental group which accounted for 33.33 per cent of all the deaths. Since this is rather a high percentage of accidents, the operative record of this group was again reviewed. In 17 records, in which the method of removal was stated, 15 operators removed the gallbladder from the duct to the fundus. These figures appear to be a strong argument in favor of a reversal of the procedure.

*Conclusions*

1. Males seek surgical relief from gallbladder disease at a later date than females.
2. Males spend more days in the hospital than females.
3. The male is a much poorer risk than the female.
4. The clinical and pathological findings are not always in accord.

*—Concluded on page 27*

# *Management of the Dystocia*

## CAUSED BY OCCIPUT POSTERIOR POSITIONS

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IT has seemed to me that in discussing the more dramatic and spectacular problems of obstetrics we have in recent years relegated that more prosaic and tedious one—the handling of the persistent posterior position—somewhat to the background. It does, however, I am sure, rear its ugly head with nagging persistence in our everyday routine of practice with far greater frequency and regularity than any of its more spectacular confrerès. I am persuaded that it exacts a greater toll, certainly of fetal life and probably indirectly in maternal morbidity, than any other obstetrical complication. Yet in talking with others of our specialty in this and other parts of the country, it is surprising to see how much like "the skeleton in the closet" this subject is regarded and with

From the Obstetric and Gynecologic Service of the Brooklyn Hospital.

what difficulty it is dragged forth into the light of day. No matter what method we may individually elect in dealing with it, this seems to be one phase of obstetrics about which we are not too proud.

JUST what per cent of all vertex presentations are of the posterior variety is variously estimated by different authorities. With the large number of labors, particularly multiparous, arriving at the stage of crowning with only rectal or no examinations having been previously done, the difficulty of making any such estimate an accurate one is readily apparent. This is, however, of small importance as it is well known that the majority of them progress almost, if not as rapidly as anterior positions, rotate when the vertex strikes the pelvic floor and deliver spontaneously or with no more aid than is given the normal anterior position. It is not with these that we are concerned, but rather those posterior positions giving rise to labors in which the pains are mild, irregular and nagging, the cervix is distressingly slow in dilating, the vertex reaches a certain level in descent and will sink no lower and the sagittal suture remains in the posterior or at best the transverse position.

It has been a commonly held opinion that posterior positions are caused by some inherent character of the pelvis, such as deformity of the inlet, faulty tilting, thickness and depth of the symphysis or some other characteristic of the individual pelvis which cannot be determined or predicted with any degree of certainty by present clinical measurements or methods. It is a common clinical observation that a pelvis which produces a posterior position once is prone to do so in subsequent pregnancies. The studies of Caldwell and his associates in the classification of pelves by roentgenological methods and their observations of the fetal head in its entrance to and descent through the bony birth canal by x-ray, bid fair to give us a method by which it may be predicted before the onset of labor what pelvis or which pelves may be expected to produce these positions.

IN the textbooks of our time the subject is "handled with kid gloves," as it were. The advice to be found in them is usually to "sit tight" and wait for nature to solve the problem. This attitude is easily understood when it is remembered that these books are used in the main by students and novices in medicine. But obstetricians in well equipped hospitals should be able to reduce both mortality and morbidity by proper interference at the proper time. While watchful waiting in the hope that nature can and will do a better job than we could is a virtue greatly to be extolled, idle procrastination, where wise and timely interference might change the picture for the better, cannot be too strongly condemned. It is in these persistent or arrested posterior positions, in our opinion, that such interference can be of the greatest value, Yet the adoption of a fixed policy to interfere just as soon as the cervix is fully dilated, as occasionally advocated, is, we believe, a mistake. Our greatest difficulty has been, not in delivering after the cervix was fully dilated, but rather in getting the cervix to reach a state of full dilation and retraction, and we find that when this has been accomplished, by waiting yet a little longer, spontaneous delivery will often occur or interference be made much easier.

IN few situations in obstetrics is the old adage that "forewarned is forearmed" more applicable that in this. As one works longer and gains greater experience in the field of obstetrics, one finds that one is able to foresee and predict with greater and greater accuracy which of one's cases are most likely to produce this troublesome complication. In a surprisingly large number of these cases, the history of rupture of the membranes before or soon after the onset of labor, with absence of regular hard contractions, but followed by a long period of irregular, mild but sufficiently annoying pains to prevent sleep and rest, will point toward a posterior position before any examination at all is made. Likewise the complaint that the pains are all or mostly in the back is extremely suggestive. From external examination alone, the finding of fetal small parts prominently anterior on one side with a corresponding posterior rotation of the back on the other, and particularly a fetal heart heard well out

into the flank, will indicate a probable posterior position. Especially is this true of right-sided positions, as a considerably larger portion of such are posterior. All these things together will point, not only to a posterior position, but frequently to one that will give trouble.

GRANTED, then, that suspicion of trouble from a posterior position has been aroused, what may be done in a prophylactic way during that period of watchful waiting before interference may become necessary? There are several things which we consider to be of very definite value. First, is the use of castor oil and quinine. Oftentimes this will give impetus to a lagging labor that will cause it to progress more rapidly and normally. Second, is the maintenance of proper fluid intake with sufficient carbohydrate to prevent acidosis during these long and exhausting labors. There has gradually crept up among some of us at our hospital a conviction that the forcing of fluids by mouth, after active labor has become established and analgesia begun, is not only useless, but at times actually harmful. It is believed that little if any of this fluid is absorbed but accumulates in the stomach along with that regurgitated back through the pylorus, only to be vomited during the deep anesthetic usually required at some stage in these cases, with the accompanying danger of aspiration of some of the vomitus. Few of us would think of doing any surgical procedure without careful preoperative preparation, an important element of which is the assurance of an empty stomach by the exclusion of all food and fluid by mouth for a period of ten to twelve hours preoperatively. Modern obstetrics practically necessitates the use of surgical anesthesia. Does it not seem logical that these cases should be just as carefully prepared for and insured against general anesthesia as are our surgical cases? This has been most dramatically brought home to us in the few years just past by a series of accidents much too numerous for comfort or peace of mind. With present-day perfection of technique in the administration of fluid and glucose by vein and beneath the skin, the dangers of oral administration far outweigh those of these methods. Third, and certainly of importance equal to the second, is the preservation of every possible bit of strength and energy by relief from pain and rest for the time when such strength can be used to best advantage, namely, when the cervix is fully dilated and something may really be accomplished by voluntary effort. Many times the forces of nature have fallen short of the accomplishment of their goal by just that narrow margin of the inability to give those last few necessary expulsive efforts because of exhaustion from the first stage of labor. Our objective here may best be accomplished, we believe, by liberal use of analgesics. Certainly we have never been accused of being conservative in our use of these drugs, in fact, quite the contrary. Yet I feel sure that no member of our staff would say that he has ever seen a baby in whom narcosis played a part in its death and equally sure that all could point out many instances in which it has been of great importance in saving the lives of the mothers. The number of drugs used for this purpose, particularly in recent years, has veritably become legion. We have on occasion changed from a routine of morphine, scopolamine, and ether and oil by rectum, established some years ago, but have always returned to it as, in our hands at least, much the most satisfactory of all. It has been our practice to keep our patients so completely under the influence of these drugs that they sleep quietly between pains and rouse only slightly with them. The amount necessary to accomplish this varies of course in different patients, and may be gauged only by experience and constant attendance. We will often give a patient a prolonged period of rest, eight to twelve hours, by a large enough dose of morphine, supplemented by bromide and chloral by rectum, to stop labor for that period. Whatever disadvantage may result from the prolongation of labor by this method is far outweighed by the conservation of strength and the fact that it leaves an unterrified mother for her next pregnancy. By lessening the strength and severity of contractions and increasing the interval between them with these analgesics, the amount of squeezing the baby is subjected to during these long labors is greatly lessened. Most impor-

tant of all, perhaps, is the lessening of the tendency on the part of the uterus, with the fetus in an abnormal position, to form a contraction ring, a condition which will be discussed more fully later. The fourth and last of our prophylactic measures might be described as those directed toward the hastening of cervical dilatation. Theoretically, a Voorhees bag should be of use in this respect, but practically it does not always work out so. These bags will dilate, but fail to paralyze, and the cervix will tend to close down somewhat when they come through. They have at times, however, opened the cervix sufficiently for a hand to be put through it and a rotation of the vertex performed. I believe it is a method worthy of greater trial than we have given it. Not indiscriminately, of course, but in selected cases.

THE next question to arise is, when does a posterior position become persistent or arrested? We are very much inclined to let any patient alone who has shown definite, even though slight, progress either in degree of dilatation or descent of the vertex or both, from hour to hour (our examinations are made rectally rather regularly every two hours). When there has been neither demonstrable dilatation nor descent for some hours after the cervix has reached a degree of dilatation sufficient to allow the hand to be inserted through it, or if the time required to reach that degree of dilatation has been long enough to demonstrate that an equally long or longer time will be required to complete the dilatation, we would regard this as the stage of arrest and would begin to consider means for hastening the labor. Such a decision requires a finesse in judgment that may well be regarded as the art rather than the science of medicine.

WHAT, then, can be done when this stage has been reached? We may follow the advice laid down by most textbooks and wait, but in doing so we should feel that we were greatly jeopardizing the life of the baby from the prolonged squeezing and usually difficult delivery in the end. The mother's chances of becoming a victim of puerperal sepsis as a result of the exhaustion from the long labor and ruptured membrances are greatly enhanced. In some hospitals the situation would be met by a low flap Cesarean section. But here again usually enters the danger of infection, low flap operation notwithstanding, to say nothing of the hazard of rupture of the scar in subsequent pregnancies. Furthermore, Cesarean section, even in the most skilful hands and under the best of circumstances, seems to carry an almost irreducible constant mortality, which is greater than in delivery from below. The exception we make to the above tenets, in regard to section, is in the case of the elderly primipara who has been married for some time and with whom a baby is therefore a very important consideration. The Latzko operation as advocated by Steele, Burns and others we have regarded as technically too difficult to merit consideration. Certainly at this stage version, the Scanzoni maneuver or Kielland forceps are out of the question as they can be used only when and where the cervix is fully dilated or at least nearly so. Yet we feel that it is at this time and stage that the battle is lost or won in many cases. Some years ago Dr. Ralph Pomeroy began using a method in these situations which to those who have succeeded him has seemed logical, relatively safe, and distinctly advantageous over other methods. It has for its purpose the breaking up of a vicious cycle of circumstances prone to occur with posterior positions, thus hastening the labor and placing the vertex in the most advantageous position for delivery when that time comes. As has been pointed out above, the membranes are prone to rupture before or soon after the onset of labor. With the consequent loss of amniotic fluid, the fetus placed in abnormal relation to the uterine cavity, the contractions irregular as to interval, strength and duration, a spastic condition of the uterus will develop, whereupon it clamps itself tightly around the body of the fetus in its abnormal position. The vertex does not fit the pelvis well and fails to come down against the cervix in such a way as to stimulate the lower uterine segment to retract normally. This gives rise to the formation of a stiff contraction ring at the junction of the upper and lower uterine segments. This ring was first described by Bandl and has been subsequently variously des-

ignated as retraction ring, contraction ring and hour-glass uterus. Call it what you will, it is a stiff circular band of muscle fibers at the juncture of the retractile and contractile portions of the uterus. Its presence has been demonstrated to all of us many times, both in the intra-uterine manipulation soon to be described and occasionally in Cesarean sections. In the former it may be felt as a tight ring around the baby's neck. In the section, it stands out clearly, creating a definite sulcus between the upper and lower portions of the uterus and, when cut through, is found to consist of a definitely thicker band of muscle than exists in the wall either above or below it. It is our feeling that this soft part dystocia rather than any definite disproportion between the vertex and bony birth canal gives rise to the difficulty in most cases of arrested posterior positions. A method designed to prevent or correct this soft part dystocia would then seem to be the one of choice. To do this, when the cervix has become sufficiently dilated, softened and thinned to permit insertion of the hand through it, the vertex is grasped firmly between the thumb and fingers, is pushed upward into the pelvic brim, occasionally above it, and rotated from R.O.P. to L.O.A., or conversely from L.O.P. to R.O.A., a distance on the circle of 180 degrees, so that the sagittal suture remains in the same oblique diameter of the pelvis. The detailed technique for doing this is to have the patient well down over the edge of the table, kneel on one knee with back to the patient and, reaching behind, to insert the hand slowly and carefully through the cervix, right hand in right positions and left hand for left positions. The vertex is now firmly grasped with the fingers on the side of the vertex that lies uppermost or anterior, thus placing the hand in pronation. The vertex is now pushed upward and the rotation begun with the operator rising gradually from the kneeling position and slowly turning with the front of his body toward the patient as the rotation progresses. When completed the operator is standing with his hand supinated and the vertex lying in its new anterior position. An assistant on the abdomen helps by pushing the back over as the vertex is rotated. It is futile to attempt this procedure without the complete relaxation of deep surgical anesthesia. We use open ether after gas induction. In the absence of a contraction ring and with proper anesthesia, this maneuver is easily accomplished. When such a ring is present, with the accompanying spasm of the entire uterus, deep anesthesia must be continued until relaxation occurs and even then it is often necessary to carry the hand up beyond the vertex and, grasping the shoulder between the index and middle fingers, turn the body in this manner along with the vertex. It is useless to turn the vertex unless the body goes with it, as it will revert to its former posterior position as soon as released. After the rotation is accomplished, the vertex is usually held in its new position until it sinks, from vomiting or pains, far enough into the pelvis to become fixed. The patient is now put back to bed and, usually in from thirty minutes to an hour, labor is reestablished and progresses at a much more rapid rate to full dilatation. This state has usually been reached in from one to eight hours. If it goes longer than this we sometimes find it necessary to deliver for the baby's sake even though the cervix is not entirely out of the way and the vertex not on the pelvic floor. This is found to be infinitely easier as the result of the vertex having been rotated to the anterior position. What, then, has been gained by this procedure and how? First, the labor has been shortened by the further dilatation of the cervix in inserting the hand through it and the child has been shifted from its old unnatural bed to a new and more natural one with a lessened tendency for the uterus to clamp down around it again; contractions become more normally rhythmic and expulsive; the contraction ring, if present, has been relaxed with a lessened likelihood of its recurrence. Second, and more important, the vertex has been placed in a much better position for delivery should this become necessary. What are its dangers? Any procedure which invades the uterine cavity, particularly after a long period of labor, has associated with it the danger of introducing infection. It must be remembered, though, that the invasion is of the lower uterine segment only and our experience has been that this is seldom followed by any severe

degree of infection. The danger of rupture of the uterus is negligible. The danger of dislodging a lowly implanted placenta is rarely encountered and may usually be obviated by its ready discovery when the hand is being introduced into the cervix and discontinuance of the procedure. The great danger to the baby is, of course, prolapse of the cord. This, however, occurs with surprising infrequency, possibly because there is usually but little water left in the uterus to wash it down. When it does, it may usually be tucked up behind an elbow and kept there. Occasionally, the cervix may be easily enough dilated to allow immediate delivery by version and extraction or by forceps. In any event, fewer babies will be lost through this mishap, we believe, than would be the case if rotations were not done.

DR. POMEROY claimed no credit for originality in using this method and I have seen it described rather vaguely in the literature since he introduced it, but not in such a way as to make one feel that one could go out and do it without further explanation and instruction. He had a series of definite steps or maneuvers in doing this rotation, each of which was designed to accomplish a certain part of the entire procedure. The kneeling, pushing upward of the vertex and rising and turning of the operator as the rotation progressed all had their part.

IN the early days of its use, as with any new method, enthusiasm undoubtedly led to its use in many cases that would have gotten along perfectly well without it. But it has now been ten years since the death of Dr. Pomeroy and experience has tended to limit it more strictly to cases in which it is definitely indicated. Some of us have come, moreover, to feel that many more vertices enter the pelvis in the transverse diameter than was formerly thought and that it is useless to try to turn these over by this rotation as they will almost invariably go to the same diameter on the opposite side and remain there as persistent occiput transverses. We have been much interested in the use of the Kielland forceps in these transverse arrests and one of our number has become very adept and skilful in their use. Certainly their construction makes them much easier to apply and, with a little experience in manipulating them, rotation of the vertex is made much easier than with the more conventional blades. Just by pushing the vertex up a little or at other times pulling it down a little in the pelvic cavity, the level at which the rotation may most easily be carried out will be indicated. At times the Kielland forceps seem to act as perfectly satisfactory tractors for the extraction, but at others we have found it advisable to remove the Kielland and apply the Elliot or Dewees forceps for the actual extraction. But here again we must remember that after the stage where forceps may be used is reached, the baby is often already in bad shape from the long labor and, where the fit of the vertex into the pelvic cavity is a tight one, it is no easy matter to turn it into an anterior position and deliver it. By use of the Kielland forceps in these transverse arrests, I feel that the results will probably be as good if not a little better than with the rotation of Pomeroy.

In some clinics, podalic version is practiced in these cases. Here again it is only after the cervix has reached full or nearly full dilatation that it may or should be used and, with a spastic uterus, often with little water left in it and usually a contraction ring present, the difficulty of the procedure itself and the very definite danger of rupture of the uterus make it seem to us a measure to be avoided. Furthermore, the invasion of the upper instead of the lower uterine segment at an even later time than our rotation makes infection more likely to supervene.

LASTLY, no discussion of posterior positions would be complete without mentioning those occasional cases where the occiput rotates spontaneously into the hollow of the sacrum. These will not only rotate posteriorly, but often crown in this position. It is usually a mistake to turn them to anterior positions, but wiser to deliver them as O.Ps. with wide, deep lateral episiotomies. It is of distinct advantage at times to apply the forceps in this position and, while gas is given with pains, traction is made along with the expulsive efforts of the mother

until a good crown is obtained and then slow and careful extraction is effected under complete anesthesia.

IN conclusion, there are many methods used in the management of these troublesome cases. Each individual will do well to handle his cases by that method in which he is most proficient, provided the method itself is not fraught with too great danger. I have outlined in some detail a method which has given good results in our hands. I commend it for consideration and a possible trial. Its chief advantage lies in the fact that it permits a form of interference earlier in labor than most other methods and brings to an earlier end a labor that is, at best, long, tedious and exhausting.

35-15 86TH STREET.

# DIABETIC *Coma*

*Case Series Analysis*

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**and**
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THIS communication is an analysis of ninety-five cases of diabetic acidosis treated on the diabetic service at the Edward J. Meyer Memorial Hospital (Buffalo City Hospital) in the past ten years. Eighty-one of these cases had coma once, eleven twice, two cases were in coma three times, and one was in acidosis four times. During this period, 1994 cases of diabetes mellitus were treated.

We have divided our cases into three main groups. Group One presents the patients with acidosis who had ketone bodies in the urine and lowered $CO_2$ combining power of the blood plasma without many other symptoms; Group Two, the more severe type, had in addition, drowsiness, vomiting and Kussmaul breathing; Group Three includes those who had all the above symptoms and were completely unconscious. There were twenty-three cases or 24.2 per cent in Group I, fifty-six cases or 61 per cent in Group II, and sixteen cases in Group III. We had four deaths in group I, thirty-nine in group II, and fourteen in group III.

Our series includes fifty-nine males and thirty-six females, seventy-eight of whom were white, fourteen colored, two Indian and one Chinese.

*Duration of Diabetes Prior to Onset of Coma*

| *Number of years* | *Number of cases* |
|---|---|
| 0-1 | 10 |
| 1-3 | 25 |
| 4-6 | 12 |
| 7-9 | 8 |
| 10-12 | 8 |
| 13-15 | 2 |
| 16-19 | 3 |
| Unknown | 3 |
| First knew they had diabetes mellitus | 24 |

From the Medical Service of the Edward J. Meyer Memorial Hospital and School of Medicine, University of Buffalo.

| *Age* | *Number of cases* |
|---|---|
| 1-10 | 4 |
| 11-20 | 15 |
| 21-30 | 6 |
| 31-40 | 23 |
| 41-50 | 12 |
| 51-60 | 19 |
| 61-70 | 13 |
| 71-80 | 3 |

*Age Incidence*

TWENTY-FOUR patients had no knowledge of their illness until they were brought to the hospital in a comatose state, apparently having had diabetes a relatively short time. Ten of our cases had had the disease for a year before the onset of coma. The greatest percentage of the group showed acidosis within six years of the onset of the diabetes, while in those who had had the disease a longer period, the incidence of coma was less frequent, since these patients were more accustomed to the routine and, when acidosis did occur, it was precipitated by some complication.

Following admission to the hospital, thirty-eight cases of our group have recovered; the majority within twenty-four hours. Four cases required thirty-six hours for complete recovery and one case forty-four hours.

*Duration of Coma Following Hospitalization and Recovery*

| *Number of hours* | *Number of cases* |
|---|---|
| 7 | 1 |
| 8 | 5 |
| 9 | 3 |
| 10 | 1 |
| 11 | 1 |
| 12 | 5 |
| 14 | 2 |
| 15 | 1 |
| 16 | 3 |
| 18 | 2 |
| 20 | 2 |
| 22 | 1 |
| 24 | 6 |
| 36 | 4 |
| 44 | 1 |

*Duration of Acidosis Prior to Admission to the Hospital*

| *Number of days* | *Number of cases* | *Percent* |
|---|---|---|
| 0-1 | 3 | 3.1 |
| 1 | 18 | 18.8 |
| 2 | 33 | 34.6 |
| 3 | 16 | 16.7 |
| 4 | 8 | 8.4 |
| 5 | 3 | 3.1 |
| 6 | 1 | 1.1 |
| 7 | 4 | 4.2 |
| 10 | 3 | 3.1 |
| Unknown | 6 | 6.3 |

As indicated in the above table, about 50 per cent of our patients were not brought into the hospital for treatment until seventy-two hours after the onset of acidosis. They frequently disregarded the symptoms of impending coma, at the same time disrupting the routine. Some of our patients went as long as ten days before seeking medical attention and treated themselves for what they supposed to be other ailments.

OF the fifty-seven deaths in the entire series, thirty-six expired within twenty-four hours following the institution of treatment in the hospital. Some of the remainder lived as long as six days. As will be shown later, the cause of death in most instances was not the diabetes alone, but the complicating disease or condition which precipitated the acidosis. In many instances the diabetic coma seemed to be under control but the

| Number of hours | Number of cases | Number of hours | Number of cases |
|---|---|---|---|
| 1 | 2 | 40-45 | 3 |
| 2-4 | 3 | 50-60 | 1 |
| 5-7 | 11 | 60-70 | 1 |
| 8-10 | 9 | 70-80 | 3 |
| 11-13 | 5 | 96 | 1 |
| 14-16 | 3 | 118 | 1 |
| 17-20 | 0 | 132 | 1 |
| 21-25 | 3 | 144 | 1 |
| 25-30 | 3 | 192 | 1 |
| 30-35 | 0 | 140 | 1 |
| 35-40 | 3 | | |

*Duration of Coma to Death While in the Hospital*

complications were the deciding factor.

As indicated, the majority of deaths occurred in the group beyond middle life, in whom the complications were also more frequent. Since the coma series here includes a rather small number of patients below the age of fourteen, the comparative death rates in this table as regards children and adults would not furnish satisfactory criteria for prognostic judgment.

*Age at Death*

| Age | Number of cases |
|---|---|
| 1-10 | 2 |
| 11-20 | 6 |
| 21-30 | 1 |
| 31-40 | 13 |
| 41-50 | 9 |
| 51-60 | 12 |
| 61-70 | 12 |
| 71-80 | 2 |
| Total 57 cases = 60% | |

AS indicated in the table, half of our cases were beyond middle life and more than 38 per cent were beyond the age of fifty years. Our youngest patient was four years of age and the oldest was seventy-five years of age. In this group, forty-seven cases gave a definite history of dietary indiscretion and failure to take insulin as directed. In twenty-seven cases, infection was the predisposing cause, while four cases of coma were precipitated by some surgical procedure. Twenty-four cases were admitted to the hospital in coma who did not know previously that they had diabetes mellitus.

Many of our patients are of foreign extraction, resulting in language difficulty which leads to poor cooperation and frequent misunderstanding of instructions. The majority of these patients are also supported by charitable organizations and this, in some degree, leads to difficulty in carrying out the dietary regimen.

*Duration of Diabetes to Death*

| Number of years | Number of cases |
|---|---|
| 0-1 | 22 |
| 2-5 | 10 |
| 6-10 | 7 |
| 11-15 | 4 |
| 16-20 | 3 |
| Unknown | 11 |

It is of interest to note that twenty-two cases in our group, who died, had had diabetes less than one year, ten had had the disease less than five years, while the remainder of the group who died were known diabetics for from fifteen to twenty years.

In Group I, twenty-three cases of acidosis were treated, nineteen of whom recovered; four expired. The blood sugar level on admission to the hospital varied from 200 to 800 milligrams per 100 cubic centimeters. The majority of these patients had a relatively high blood sugar; however, the blood sugar level had no

| GROUP I | | | | GROUP II | | | | GROUP III | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Blood sugar | Number of cases | Number recovered | Number Died | Blood sugar | Number of cases | Number recovered | Number Died | Blood sugar | Number of cases | Number recovered | Number Died |
| 200-300 | 3 | 2 | 1 | 200-300 | 2 | 2 | 0 | 400-500 | 1 | 0 | 1 |
| 301-400 | 1 | 1 | 0 | 301-400 | 2 | 1 | 1 | 501-600 | 1 | 0 | 1 |
| 401-500 | 4 | 4 | 0 | 401-500 | 5 | 4 | 1 | 601-700 | 1 | 0 | 1 |
| 501-600 | 4 | 2 | 2 | 501-600 | 5 | 1 | 4 | 701-800 | 1 | 1 | 0 |
| 601-700 | 4 | 3 | 1 | 601-700 | 9 | 1 | 8 | 801-900 | 2 | 0 | 2 |
| 701-800 | 2 | 2 | 0 | 701-800 | 8 | 3 | 5 | 901-1100 | 4 | 0 | 4 |
| 801-900 | 2 | 2 | 0 | 801-900 | 7 | 1 | 6 | 1101-1500 | 4 | 1 | 3 |
| Unknown | 3 | 3 | 0 | 901-1000 | 3 | 1 | 2 | 1501-1900 | 2 | 0 | 2 |
| | | | | 1001-1100 | 1 | 0 | 1 | | | | |
| | | | | 1101-1600 | 8 | 3 | 5 | | | | |
| | | | | Unknown | 6 | 0 | 6 | | | | |

*Blood Sugar Analysis*

apparent relation to death rate incidence.

In Group II, the more severe type of diabetic acidosis, we had fifty-six cases, seventeen of whom recovered and thirty-nine expired. The blood sugar level in this group was considerably higher than in the previous group and apparently the height of the blood sugar had some direct bearing on the mortality incidence. The percentage of those who died increased as the blood sugar percentage went up. The majority of this group had complications.

In Group III were included sixteen cases in complete diabetic coma, two of whom recovered and fourteen expired. The blood sugar levels in this group did not vary much from the previous group but complications were more numerous.

The carbon-dioxide combining power of the patients who died was relatively low in the more severe types of coma.

In the more severe types of diabetic acidosis, the blood urea nitrogen was considerably increased, part of it being due to dehydration. The remainder of the cases had definite renal damage.

*Blood Carbon-Dioxide Values*

| GROUP I | | | | GROUP II | | | | GROUP III | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $CO_2$ Comb. | Number of cases | Number recovered | Number Died | $CO_2$ Comb. | Number of cases | Number recovered | Number Died | $CO_2$ Comb. | Number of cases | Number recovered | Number Died |
| 11-15 | 1 | 1 | 0 | 6-10 | 1 | 1 | 0 | 6-10 | 3 | 0 | 3 |
| 16-20 | 1 | 1 | 0 | 11-15 | 12 | 7 | 5 | 11-15 | 2 | 1 | 1 |
| 21-25 | 3 | 3 | 0 | 16-20 | 2 | 2 | 0 | 16-20 | 0 | 0 | 0 |
| 26-30 | 1 | 1 | 0 | 21-25 | 4 | 2 | 2 | 21-25 | 1 | 0 | 1 |
| 31-35 | 4 | 4 | 0 | 26-30 | 5 | 0 | 5 | 26-30 | 0 | 0 | 0 |
| 35 plus | 3 | 2 | 1 | 31-35 | 1 | 0 | 1 | 31-35 | 1 | 1 | 0 |
| Not done | 10 | 7 | 3 | 35 plus | 4 | 0 | 4 | 35 plus | 1 | 0 | 1 |
| Total | 23 | 19 | 4 | Not done | 27 | 5 | 22 | Not done | 8 | 0 | 8 |
| | | | | Total | 56 | 17 | 39 | Total | 16 | 2 | 14 |

The Wassermann reaction was positive in thirteen of our cases.

Leukocytosis was the rule in this series.

*Complications*

COMPLICATIONS were present in forty-eight cases of the fifty-seven deaths.

(1) Surgical procedures in four cases.
(2) Cardiac failure in nine cases.
(3) Meningitis in two cases (tuberculous and pneumococcic).
(4) Cerebrovascular accidents in four instances.
(5) Infection in five cases.
(6) Pneumonia in seven cases.
(7) Biliary tract disease in three cases.
(8) Tuberculosis in two cases.
(9) Kidney disease in six cases.
(10) Strangulated hernia and peritonitis in one case.
(11) Gastro-intestinal disease in two cases.
(12) Marked generalized arteriosclerosis and coronary disease in six cases.

Nine cases had no complications and died as a result of the diabetic coma.

*Blood Urea Nitrogen*

| GROUP I | | | | GROUP II | | | | GROUP III | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Urea | Number of cases | Number recovered | Number Died | Urea | Number of cases | Number recovered | Number Died | Urea | Number of cases | Number recovered | Number Died |
| 10-15 | 10 | 8 | 2 | 10-15 | 5 | 3 | 2 | 10-15 | 1 | 1 | 0 |
| 16-20 | 2 | 2 | 0 | 16-20 | 7 | 4 | 3 | 16-20 | 1 | 0 | 1 |
| 21-25 | 4 | 4 | 0 | 21-25 | 5 | 3 | 2 | 21-25 | 0 | 0 | 0 |
| 26-30 | 2 | 2 | 0 | 26-30 | 3 | 2 | 1 | 26-30 | 1 | 1 | 0 |
| 31-35 | 0 | 0 | 0 | 31-35 | 3 | 1 | 2 | 31-50 | No cases | | |
| 36-40 | 1 | 1 | 0 | 36-40 | 2 | 0 | 2 | 51-100 | 2 | 0 | 2 |
| 41-45 | 0 | 0 | 0 | 41-45 | 2 | 1 | 1 | 101-175 | 0 | 0 | 0 |
| 46-50 | 0 | 0 | 0 | 46-50 | 1 | 0 | 1 | Not done | 11 | 0 | 11 |
| 51-100 | 0 | 0 | 0 | 51-100 | 2 | 0 | 2 | Total | 16 | 2 | 14 |
| 101-175 | 0 | 0 | 0 | 101-175 | 2 | 0 | 2 | | | | |
| Not done | 4 | 2 | 2 | Not done | 24 | 3 | 21 | | | | |
| Total | 23 | 19 | 4 | Total | 56 | 17 | 39 | | | | |

*Summary*

We have analyzed ninety-five cases of diabetic acidosis. Of this group, fifty-seven expired. In determining the death rate, we must exclude those cases who had complications which in themselves were sufficient to cause death. In those who died in our group, forty-eight had major complications, and had been under treatment a relatively short time or had had no previous treatment for diabetes at all, while nine died of diabetic coma alone. The mortality rate of diabetic coma is relatively high since associated diseases are more difficult to handle in the presence of diabetes.

LINWOOD MEDICAL CENTRE,
333 LINWOOD AVENUE.

# Compression Fractures

## OF THE BODIES OF THE DORSAL AND LUMBAR VERTEBRAE

OTHO C. HUDSON, M.D., F.A.C.S.

Hempstead, N. Y.

ONE hundred and thirteen cases of compression fracture of the dorsal and lumbar spine have been treated from January 1, 1930 through December 31, 1938. The end results have been studied with reference to the type of treatment used, immediate postoperative complications, and end results clinically and roentgenographically.

The majority of the cases were from the surgical service at Nassau Hospital, Mineola, New York, of Dr. B. W. Seaman. Additional cases were treated at the Huntington Hospital, Huntington, New York, North Country Community Hospital, Glen Cove, New York, South Nassau Communities Hospital, Oceanside, New York, and Meadowbrook Hospital, Hempstead, New York. Treatment was rendered by Drs. W. L. Sneed, W. P. Bartels, J. C. Felicetti, and the author.

In this series, males were affected sixty-five times and females forty-eight times. The ages varied from ten to ninety-nine years. The greatest number of cases occurred during the active years of life.

The age incidence is as follows:

| Ages | Number of Cases |
|---|---|
| 1- 10 years | 1 |
| 11- 20 years | 7 |
| 21- 30 years | 22 |
| 31- 40 years | 34 |
| 41- 50 years | 20 |
| 51- 60 years | 12 |
| 61- 70 years | 10 |
| 71- 80 years | 6 |
| 91-100 years | 1 |

Occupation played no part in the causation of the injury, although housewives were more frequently involved:

| Occupation | Number |
|---|---|
| Domestic | 4 |
| Truck Driver | 3 |
| Manufacturer | 2 |
| Housewife | 37 |
| Painter | 6 |
| Laborer | 15 |
| Carpenter | 10 |
| Nurse | 2 |
| Student | 7 |
| Chauffeur | 2 |
| Superintendent | 3 |
| Clerk | 5 |
| Salesman | 2 |
| Florist | 2 |
| Marble Cutter | 1 |
| Groom | 1 |
| Foreman | 2 |
| Mechanic | 1 |
| Riding Master | 1 |
| Butcher | 1 |
| Gardener | 1 |
| Plasterer | 1 |
| Banker | 1 |
| Watchman | 2 |

Investigation of the causes of the injuries yields the following information:

| Cause of Accident | Number |
|---|---|
| Automobile Accident | 42 |
| Dove in shallow water | 2 |
| Thrown from horse | 11 |
| Fell down steps | 12 |
| Fell from tree | 7 |
| Fell from scaffold | 9 |
| Fell from roof | 3 |
| Aëroplane accident | 1 |
| Struck top of automobile going over bump | 3 |
| Jumped from a window | 2 |
| Parachute jumping | 1 |
| Fell off ladder | 6 |
| Fell down silo | 1 |
| Fell in sitting position on floor | 11 |
| Football playing | 1 |
| Struck by train | 1 |
| Bureau fell on shoulder | 1 |

Injuries received while riding in an automobile caused approximately 50 per cent of these cases. Falling down stairs, falling in a sitting position on the floor, and falling off a horse each produced approximately 10 per cent.

The year incidence was as follows:

| Year | Number of Cases |
|---|---|
| 1930 | 14 |
| 1931 | 14 |
| 1932 | 7 |
| 1933 | 6 |

| | |
|---|---|
| 1934 | 7 |
| 1935 | 11 |
| 1936 | 21 |
| 1937 | 21 |
| 1938 | 12 |

The incidence by months follows:

| Month | Number of Cases |
|---|---|
| January | 11 |
| February | 2 |
| March | 5 |
| April | 7 |
| May | 10 |
| June | 15 |
| July | 11 |
| August | 12 |
| September | 18 |
| October | 7 |
| November | 6 |
| December | 9 |

Compression fractures of the body only were considered. The twelfth dorsal and the first lumbar vertebrae were most often injured. Five fractures with dislocation occurred. Six cases with more than one body injured were encountered. Two cases had had old fractures of the spine before the acute injury.

The following table gives the sites of the lesions:

| Site of Injury | Number of Cases |
|---|---|
| Compression fracture of the body: | 113 |
| Fourth dorsal | 2 |
| Fifth dorsal | 5 |
| Sixth dorsal | 4 |
| Seventh dorsal | 1 |
| Eighth dorsal | 2 |
| Ninth dorsal | 1 |
| Tenth dorsal | 2 |
| Eleventh dorsal | 1 |
| Twelfth dorsal | 23 |
| First lumbar | 41 |
| Second lumbar | 10 |
| Third lumbar | 3 |
| Fourth lumbar | 3 |
| Fifth lumbar | 2 |
| Fractures with dislocation: | 5 |
| Third dorsal | 1 |
| Twelfth dorsal | 1 |
| First lumbar | 3 |
| Multiple fractures: | 6 |
| First and second lumbar | 1 |
| Twelfth dorsal and first lumbar | 3 |
| Tenth and twelfth dorsal | 1 |
| Second and fourth lumbar | 1 |
| Old fracture with acute fracture | 2 |
| Acute fracture first lumbar; old fracture second lumbar | 1 |
| Acute fracture twelfth dorsal; old fracture first lumbar | 1 |

THE treatment has varied during these nine years from gradual hyperextension on a convex frame and two-table delayed hyperextension, to acute hyperextension on an automobile jack. From January, 1930 through April, 1935, some cases were treated by gradual hyperextension on a curved convex frame and others by rest on a convex frame for seven to ten days and then obtaining hyperextension by swinging the patient between two tables. A plaster jacket was then applied. Since May, 1935, all but a few cases have been treated by immediate reduction with decompression, using an automobile jack at the site of fracture. The patient lies on the jack and the weight is distributed along a piece of spring steel. By elevation of the jack arm plus gravity hyperextension is obtained and a plaster jacket is applied.

Three cases of fracture with a dislocation associated had laminectomy and freeing of the locked facets. In two cases no treatment was given except a fracture board. Two cases of upper dorsal compression fracture were reduced by using a surcingle about the body with hyperextension by swinging the body from a hook overhead. All dorsal vertebrae above the tenth were immobilized in a Calot jacket.

The methods of treatment used are shown in the following table:

| Method of Treatment | Number of Cases |
|---|---|
| Hyperextension frame—plaster | 32 |
| Two-table hyperextension—plaster | 31 |
| Automobile jack—plaster | 43 |
| Laminectomy—plaster | 2 |
| Automobile jack—Laminectomy—plaster | 1 |
| Hard bed on fracture board | 2 |
| Surcingle hyperextension—plaster | 2 |

The end results based on the x-ray findings without regard to treatment were:

| Site | Reduced | Partial Reduction | Unreduced |
|---|---|---|---|
| Dorsal | 6 | 1 | 38 |
| Lumbar | 37 | 5 | 26 |

A comparison of the end results of methods of treatment is shown in the next table:

| | Site | Reduced | Unreduced |
|---|---|---|---|
| Hyperextension frame—plaster | | | |
| | Dorsal | 1 | 17 |
| | Lumbar | 1 | 13 |
| Two-Table Hyperextension—Plaster | | | |
| | Dorsal | 9 | 15 |
| | Lumbar | 7 | 9 |
| Automobile jack—plaster | | | |
| | Dorsal | 5 | 4 |
| | Lumbar | 39 | 4 |
| Laminectomy | | 3 | 0 |
| Hard Bed | | 0 | 2 |
| Surcingle Hyperextension | | | |
| | Dorsal | 2 | 0 |

Six cases of partial correction, as shown on x-ray examination, are included as reduced in the above table. Our success using the gradual hyperextension frame to correct the bony deformity has been almost nil.

A few lumbar compression fractures have been reduced by the two-table method. It would seem from these results that we do not know how to use this method or that it is not as useful as the textbooks allege it to be.

The automobile jack method of obtaining hyperextension has been highly successful in almost all acute cases. For upper dorsal fractures we now use the automobile jack with a wedge-shaped block of wood that is placed at the site of injury.

In one case only have we been disappointed in the use of the jack—a case of fracture dislocation with locked facets. The attempt at reduction was unsuccessful and produced a partial paralysis. Laminectomy should have been done originally instead of secondarily.

The patients treated by gradual hyperextension or secondary hyperextension complained of pain in the back for from ten to fourteen days and all had nausea, vomiting, and distention that disappeared very slowly. Those treated with immediate reduction and fixation were relieved of their pain in twenty-four to forty-eight hours and rarely had any nausea, vomiting, or distention.

We reduce the majority of the fractures under hyoscine hydrobromide grain 1/150 and morphine sulfate grain ¼. One hour is allowed to elapse for the drug to take effect. Postoperatively the head of the bed is elevated, pitressin is given every three hours for two days, glycerine-magnesium sulfate enema as needed, and medication for pain. Immobilization in plaster was continuous for four months.

Patients treated by gradual hyperextension or two-table hyperextension were kept in bed and in the hospital for eight weeks or longer. Those treated by the automobile jack hyperextension were kept in bed and in the hospital for two weeks.

There were nine deaths. The deaths occurred on the third day, fourth day, seventeenth day, nineteenth day, four, five, ten and eleven weeks respectively. Six of these patients had a complete transverse myelitis from the time of the accident and one developed an incomplete transverse myelitis following an attempt at closed reduction. Two patients died of pneumonia.

The end result obtained clinically was:

| End Result | Number of Cases |
|---|---|
| Unknown | 35 |
| Deaths | 9 |
| **Hyperextension frame** | |
| Good | 6 |
| Fair | 4 |
| Poor | 13 |
| **Two-Table Hyperextension** | |
| Good | 3 |
| Fair | 3 |
| Poor | 5 |
| **Automobile jack Hyperextension** | |
| Good | 21 |
| Fair | 7 |
| Poor | 3 |

Good results are those patients without symptoms. Fair results, are those patients with pain and some limitation of motion. Poor results are those patients with deformity, pain, and marked limitation of motion.

We have had two cases with a history of an old fracture of the spine, with the level unknown. The x-ray examination showed two wedge-shaped vertebrae but it was impossible to determine the old from the recent. By the automobile jack hyperextension method the recent injury was reduced anatomically while the old remained unchanged. In addition we have seen three other wedge-shaped vertebrae following injury that were said to be old fractures, but on doing a therapeutic reduction test the restoration to normal depth proved an acute fracture to be present.

*Conclusions:*

FRACTURES of the spine with immediate complete transverse myelitis have a hopeless prognosis.

Conservative therapy offers the patient an excellent prognosis for recovery.

Complete immediate reduction of the fracture with immobilization should be done.

Abdominal symptoms are reduced to a minimum by immediate reduction of the compression.

The automobile jack hyperextension method gives excellent anatomical reduction of the injury. This has not been obtained by any other method in our hands.

The time in bed and hospitalization are shortened by adequate reduction.

The clinical end result is best when the fracture is anatomically reduced.

Spine fusion for acute fractures is unnecessary.

X-ray examination may show a wedge-shaped vertebra that cannot be said to be old or recent.

Any injury to the back with signs and symptoms that imply wedging of the body of the vertebra should be considered a fracture; a therapeutic reduction test should then be done, for a recent compression may be corrected. An old fracture will remain unchanged.

PROFESSIONAL BUILDING.

# Precancerous Skin Lesions ABOUT THE ANUS

**CHARLES J. DRUECK, M.D., F.A.C.S.**
**Chicago, Illinois**

*Inflammatory Masses*

BENIGN tumors are those composed of well differentiated tissues which approach the structure of adult tissue. These cells, although multiplying so profusely that even large tumors result, do not spread beyond the limits of the mass they are producing. They tend to remain stationary after they reach a certain size. Such tumors often closely resemble and cannot be sharply separated from inflammatory lesions, and it is probable that many growths classified as benign tumors are really inflammatory in nature. The symptoms which such tumors cause result solely from their weight and from the pressures which they exert against neighboring structures.

Cancer frequently develops from a precancerous or benign lesion, either inflammatory or neoplastic in nature, such as moles about the anus or polyps in the rectal mucosa. It cannot be determined from the structure of any particular lesion whether it would have become cancerous if allowed to remain. We merely know that cancer develops with greater frequency from such lesions than from normal tissue.

The distinction between early stages of cancer and inflammatory hyperplasia is often arbitrary. Carcinomas about the anus usually begin as inflammatory lesions, and it is only when definite invasion of the underlying tissue has occurred that a certain distinction can be made. There may be a fundamental difference between inflammatory and early neoplastic hyperplasia, but an anatomical distinction is often uncertain.

*Precancerous Dermatoses*

BOWEN[1] described a chronic atypical epithelial carcinoma forming within the epidermis which, instead of growing down into the deep cutis, spreads upwards and laterally and remains for a long time within the epidermis. The early lesion is a well confined patch which follows a pale red papule. This patch afterwards becomes covered with a thickened horny layer or crust. As it grows it takes on a serpiginous outline very similar in appearance to a gumma. Schubert[2] reported a case which at the margin showed typical benign proliferation, but in the center showed prickle cell carcinoma. This dermatosis is usually very slow in growing. The scales shed off easily, or remain and heap up into a hard calcified mass which on removal may leave an oozing dark base. Schwank and Stolz[3]

do not consider this epithelial proliferation a precancerous dermatosis at all, but believe it is a malignancy from the onset, but showing only slight tendency to metastasize in the late stages. There are no subjective symptoms.

The clinical recognition of this atypical epithelial carcinoma is quite difficult. More often these dermatoses are diagnosed psoriasis, gumma, or as inflammatory lesions.

TENSENESS of the skin is found wherever there is edema, inflammation, or swelling of the tissues in the structures beneath the skin from some cause such as hematoma or tumor.

Atrophy of the perianal skin is quite frequent in the aged, especially where there is loss of body weight. There is diminished thickness of one or more layers of the skin, the surface is shiny, elasticity is lost, and in advanced cases it feels as thin as tissue paper. There may be destruction of the hair follicles, and of the sebaceous and sweat glands.

*Keratosis*

IN elderly individuals, elevated, rough, gray-brown thickenings, one half to two centimeters in diameter, occur in the epidermis, more usually on the face and neck, but they may appear on the buttocks or perineum. The top cells are soft and fatty, and there is a zone of lymphocytes in the corium beneath. The skin becomes scaly later, and as the scales separate from the underlying skin, a reddish, slightly roughened surface is left. Keratoses show a well-known tendency to malignant degeneration (basal-cell carcinoma). When this occurs there is a disk-like thickening and induration which serve to differentiate it from the more superficial, non-indurated keratosis.

Treatment—Keratoses if seen early should be destroyed by electrocoagulation, or, if there is definite thickening, radium should be used. The skin is usually dry and thin and should be protected with a bland cream containing goose grease, mutton tallow, or cod liver oil.

*Nevus (Mole)*

A NEVUS is a circumscribed area representing hypertrophy of one or more of the cutaneous structures. Usually it is small, with a diameter of one to three millimeters, though sometimes it may attain several centimeters in area. Nevi may arise wherever pigment-producing cells exist and are therefore more commonly found in the skin and in the eye. Masson has shown that these pigmented tumors arise in relation to the neuro-epithelial derivatives of the end organs. The benign tumors are termed benign nevi; the malignant or potentially malignant tumors are melanomas.

Benign nevi are clinically comparatively easy to recognize. There are, however, several types. The most important are pigmented moles and vascular moles. Pigmented nevi are localized areas of increased pigmentation, brown or bluish-black, flat or raised, smooth or warty. Some show abnormal growth of hair. Vascular nevi (hemangiomas) may be red, bluish or purplish red, smooth and level with the skin, or raised and lobulated. If compressed they show a tendency to blanch. The so-called "port wine" mark or "birth mark" is a congenital form of vascular nevus. It may be small, but sometimes involves an extensive area of skin and subcutaneous tissue. There is no attempt at capsule formation in any type. The majority of nevi remain benign throughout their existence, and not infrequently after middle age tend to show regressive changes, at times completely disappearing.

*Malignant Melanoma*

ANY mole, particularly if irritated or disturbed, may become malignant. In the older texts, these tumors were divided into two major groups: one a tumor spoken of as a melanocarcinoma, in which large polyhedral cells predominated; the other called melanosarcoma, because of the predominance of spindle cells. It is now recognized that both types may exist side by side within the same tumor, and even within the same microscopic field. To avoid confusion from the histogenetic standpoint, they are better described as malignant melanoma.

The malignant melanoma is one of the most "malignant" tumors found in human beings. This malignancy is due to its extraordinary tendency to invade the blood stream early and thus metastasize

widely to every tissue of the body. It is, from the practical standpoint, the only tumor which almost regularly invades the heart muscle, the peripheral striated muscle of the body, the brain, the thyroid, the pancreas, and all those other structures which usually escape metastatic involvement, even though the tumor cells are blood-borne. As a result, clinical cases showing metastatic melanoma usually run a rapidly fatal course, seldom living more than a year, and often dying within a few weeks after the metastatic process has been recognized.

The bluish-black nevus is said to be most malignant, but it is to be remembered that many tumors which belong morphologically and histogenetically to this malignant group show little or no evidence of any pigmentation whatsoever either grossly or microscopically, and yet they are malignant.

*Treatment*

THE benign nevus may remain benign for years, and it may suddenly become malignant today. A small mole is just as dangerous as a large one. A malignant growth can sometimes be differentiated from a non-malignant one only by histologic examination, and that may err. Therefore, remove the mole immediately, while it is benign.

58 E. WASHINGTON STREET.

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2. Schubert, M.: A Contribution to Bowen's Disease, Dermat. Wchnschr. 100:333, March 23, 1935.
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**Associated Physicians of Long Island.**
**42nd Annual Meeting to be Held on Saturday, January 27th, 1940, in Brooklyn.**

THE annual meeting of the Associated Physicians of Long Island will be held at the Brooklyn Hospital, DeKalb Avenue and Ashland Place, Brooklyn, on Saturday, January 27th, 1940.

The scientific program will comprise operative clinics at 10:00 A.M. in the Department of General Surgery by Dr. Ernest K. Tanner and Staff; in the Department of Otolaryngology by Dr. Robert L. Moorhead and Staff; in the Department of Gynecology and Obstetrics by Dr. William S. Smith and Staff; and in the Department of Orthopedics by Dr. Donald E. McKenna and Staff.

An inspection of the Hospital will be made at 12:00 o'clock noon. At 1:00 P.M. the members will be guests of the Hospital at luncheon. At 2:00 P.M. the scientific session will be held at which the following papers will be read and discussed:

**Conservative Surgery in the Treatment of Acute Osteomyelitis**
***By Dr. Ainsworth L. Smith***

**Discussion opened by Dr. Carl Hettesheimer**

**Thyrotoxicosis in Pregnancy**
***By Dr. J. Thornton Wallace***

**Discussion opened by Dr. Austin Johnson**

**Tendonitis of the Tendon of the Long Head of the Biceps Brachii Muscle**
***By Dr. Donald E. McKenna***

**Discussion opened by Dr. Frank S. Child**

**Carcinoma of the Larynx—Demonstration of Patients using Artificial Larynx**
***By Dr. Robert L. Moorhead***

**Discussion opened by Dr. Henry B. Smith**

**The Diagnosis of Cardiovascular Syphilis: An Analysis of Twenty Cases to Necropsy**
***By Dr. Edwin P. Maynard, Jr.***

**Discussion opened by Dr. Eugene Calvelli**

At 4:00 P.M. a business meeting will take place at which officers will be elected for the ensuing year. At 7:00 P.M. the annual dinner will be held at the Montauk Club, 8th Avenue and Lincoln Place, Brooklyn.

Following the usual good fellowship which occurs at these dinner gatherings, will be a very interesting travel talk illustrated with lantern slides by Commander Frank W. Ryan, Medical Corps, U. S. N. on "A Medical Man's Experiences in Samoa".

An excellent all-day program and delightful dinner have been planned. A large attendance of our membership, both from the Island and locally, is anticipated.


*Assistant Editors:*
CHARLES WILLIAM HENNINGTON, B.S. (Rochester), M.D. (Hopkins), F.A.C.S., and ROBERT LEE BROWN, A.B. (Michigan), M.D. (Harvard).

*Department Edited by*
John M. Swan, M.D. (Pennsylvania) F.A.C.P.
EXECUTIVE SECRETARY, NEW YORK STATE COMMITTEE OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER

# THE *Iodine Test* FOR CANCER OF THE *Cervix*

IN 1928 Lahm[1] examined the material obtained by biopsy in twenty-five cases of disease of the cervix. He stained the sections of this material for the glycogen content of the cells and in cases of cancer he found that the glycogen was decreased or absent from the protoplasm. He concluded that if one found a low glycogen content, or absence of glycogen in the cells of a biopsy specimen, he should be suspicious of the existence of a precancerous lesion, or at least be careful not to overlook cancer in a neighboring portion of the section.

In 1928 Walter Schiller[13a], in a paper entitled: "On Histological Early Diagnosis of *Portio* Carcinoma," pointed out that when one is examining biopsy material for the purpose of determining the glycogen content of the cells, it is proper to use an aqueous solution of formalin for fixing the tissue because the glycogen is in a modified form and not soluble in water.

In the same year Schiller[13b] published a long article on the same subject in which he said that the earliest appearance of cancer of the cervix reminded one of its similarity to leukoplakia and Bowen's disease of the skin: both are whitish, wrinkled spots. He was of the opinion that a curetting of such an area on the cervix would be better than an actual section with any cutting instrument. Again[13c], he uses iodine-potassium iodide solution, such as is used in the staining of bacteria, which he applied macroscopically to diseased cervices.

In 1929 Schiller[13d] published a fourth paper in which he advocated the application of compound iodine solution to cervices which showed evidence of disease, for the purpose of determining the areas from which biopsy specimens should be taken. He reported the results of the test in 126 cases of disease of the cervix. In this series 17.0 per cent of the biopsy specimens showed that cancer was present.

In 1931[13e] he made a further contribution to the value of painting pathological cervices with iodine solution for the purpose of diagnosticating areas that might be carcinomatous.

In 1933[13f] he says: "I discovered this method: vital staining with Lugol's solution. . . . When the normal cervix is painted with ordinary Lugol's solution (iodine, 1; potassium iodide, 2; water, 300) the epithelium acquires, in about half to one minute, a mahogany brown color.

IN 1934[28], he said that carcinomatous areas on the cervix are whitish, but not transparent. They resemble leukoplakia; but cannot be differentiated by clinical methods. With Lugol's solution, however, it is possible to visualize the smaller abnormalities so that they may be excised and submitted to the pathologist for diagnosis. The failure of the cancer cells to take the iodine stain depends on the absence of glycogen in their protoplasm.

Also in 1934[29], in an eighth contribution, he says that the whitish or unstained areas should be removed with a small spoon curette, and that the final opinion of the malignancy of the lesion depends upon the result of the histologic study of the material thus obtained.

In 1936[31], he says that the best fixative solution is composed of absolute alcohol, 60.0; chloroform, 30.0; and glacial acetic acid, 10.0. In the series of cases reported in this communication, suspicious areas were found in 20.0 per cent of the specimens. Of these only two proved to be cancer. He says: "Even if only 1.0 per cent of the women examined give a positive diagnosis, the result is still exceedingly satisfactory. For we must not forget that a carcinoma, when detected and treated in that early stage, gives nearly 100.0 per cent security for definite, permanent healing."

In a paper published in 1937[32], continuing his development of the value of the iodine test, Schiller said that the test serves only to indicate suspicious spots. However, it should be applied to all cervices as a routine. Between 1928 and 1937 he discovered 130 cases of early carcinoma of the cervix by its use. Up to 1931 he discovered fifty-one such cases. Of these forty-nine were alive and "perfectly well" at the time of writing (1937). One patient died of recurrence two and one-half years later and, on further histological study, another was found to have been farther advanced than was at first thought. In that paper[32] Schiller says that the early carcinoma and the small one are not identical. He has proved to his own satisfaction that in the early stage carcinoma grows very slowly; later it grows very rapidly. The "fact that carcinoma grows so very slowly at the beginning offers a marvelous chance for early diagnosis." "The initial phase lasts months, even two or three years or possibly longer."

AFTER examining 3,000 so-called normal cervices he has classified the lesions found into an ulcerative group, an invasive group, and the carcinoma group which presents cytologic characteristics only.

In 1938 Schiller[33] writes of the relation between leukoplakia, leukokeratosis, and carcinoma of the cervix. He says that leukoplakia is not a specific disease; it is a symptom that may be found in several abnormalities of the cervical mucosa. Long clinical experience has shown that the number of latent leukoplakias diagnosticated with the aid of the iodine test far exceeds the number of those that are grossly visible. However, he is of the opinion that neither erosions nor inflammations form a basis for the development of carcinoma. He describes minutely the difference between the various degrees of cornification of the cells of the mucous membrane covering the cervix. He calls these variations parakeratosis, keratosis, and hyperkeratosis. He says: "Notwithstanding long follow-up studies of numerous cases, I have never as yet found areas of leukoparakeratosis or leukohyperkeratosis developing into carcinoma." and again: "There is no causal relationship between parahyperkeratosis and carcinoma of the *portio*. From extensive material I could not find even one case of carcinoma that developed from a true keratosis."

In this paper by Schiller, the iodine solution suggested for carrying out the tests is referred to as compound iodine solution and Lugol's solution, but in the paper[30] in which the formula is given, the material used is what we in the United States call Gram's solution. Lugol's solution is a much stronger iodine preparation, and is known as *Liquor Iodi Compositus*. The composition of this solution, according to the eleventh edition of the United States Pharmacopoeia, is iodine, 5.0; potassium iodide. 10.0; distilled water, q. s. 100.0 (1936).

ACCORDING to Graves[4] the test described by Schiller is specific for the determination of the *absence* of cancer of the vaginal portion of the cervix and

the vagina. He advocates the following technique: A thick swab of absorbent cotton and gauze is prepared on the end of a stout wooden applicator and dipped in Lugol's solution. This swab is then pressed firmly against the anterior lip of the cervix, exposed by a speculum or by retractors. In this way the upper vagina is flooded with the solution, which instantaneously stains the normal tissues, except the mucous membrane of the endocervix, almost black. Any area of the vaginal portion that does not take the stain must be regarded with suspicion. The suspicious area is then curetted with a specially sharpened spoon curette. The strip of epidermis thus secured is immediately placed in hardening solution and sent to the laboratory for histological study. He says: "We are finding the Schiller test an indispensable aid in the search for early curable cancer. Failure of the stain indicates certain other abnormal conditions, two of which, leukoplakia and intense cervicitis, are potential precursors of cancer and require treatment." He recommends the test to the general practitioner for trial.

Frank[2] and Healy[3] recommend the Schiller iodine test for the detection of cancer of the cervix.

Galloway[5] says that Schiller's test is a simple, painless procedure, requiring no expensive apparatus and consuming little time. It is primarily for office routine or for periodic examinations of patients who have no symptoms of cancer.

Henriksen[6] considers the Schiller test valuable. He questions its specificity for the absence of cancer, however. He applies the iodine solution with an atomizer.

Meigs[9] says that in approaching pelvic surgery Schiller's test is a necessary part of the physical examination.

Norris[10] says that the iodine test of Schiller will indicate the suspicious areas from which to take biopsy specimens.

NOVAK[11] is of the opinion that the chief value of the Schiller test lies in indicating the areas from which tissue for biopsy should be taken. And in this view of the value of the test Phaneuf[12] agrees.

Baer[1] says that Schiller's iodine test is devised to show tiny lesions of the cervix which might be early carcinoma and which should be promptly curable. In order to be effective the test must be employed as a routine and biopsy specimens should be obtained from all suspicious areas. When the microscopic picture is clear cut, the lesion is usually one which should have aroused suspicion without the employment of the test. Other specimens studied because they do not stain with iodine may show what Schiller calls the "preinvasive" stage of carcinoma. However, he considers the test "inadequate."

Martzloff[8] says that in order to recognize cancer of the cervix, "there should be adequate exposure of the cervix, adequate illumination and deliberate, thoughtful inspection." He is of the opinion that the iodine test is not pathognomonic of cancer, "though it may possibly be a signal which calls for further study."

WE have asked several physicians in Rochester (N. Y.) the following questions:

Do you use the Iodine Test (a) as a routine measure? (b) Only on areas regarded clinically as suspicious? How many years have you used it? Have you discovered small cancers by the use of it? If so, how many? Do you consider it of value?

Dr. Karl M. Wilson writes as follows: "I use it considerably, and ordinarily apply it on any cervix where there is the least suspicion of malignancy. I cannot say that I have as yet discovered any small cancers by its use. However, I would regard it as a valuable procedure. I think its greatest value lies not particularly in diagnosing or eliminating carcinoma, but rather as indicating in the suspicious cervix the best place from which to obtain material for a biopsy."

Dr. A. E. Davis has used the Iodine Test for three or four years on areas regarded clinically as suspicious. He has discovered no small cancers by its use. He considers it of diagnostic value.

Dr. Robert L. Brown is of the opinion that the test has limited diagnostic value.

Dr. William I. Dean reports that he uses the iodine test for cancer of the cervix as a routine measure and that in areas clinically suspicious, special care is taken in interpreting the result. He considers the test of diagnostic value

when it is positive.

One of us (C. W. H.) uses the iodine test as a routine measure. He has found three or four small cancers by its use. He considers it of diagnostic value.

*Summary*

THE Iodine Test, advocated by Frank, Healy, Galloway, Henriksen, Meigs, Norris, Novak, and Phaneuf, is considered specific for determining the absence of cancer and an indispensable aid in the search for early curable cancer by Graves.

Henriksen questions the specificity of the test for the absence of cancer and Baer considers it "inadequate." He thinks the lesions that are proved microscopically to be cancer should have been considered suspicious without the aid of the test. Martzloff believes that the test is not pathognomonic of cancer. It is valuable, apparently for the indication of the area from which to obtain a biopsy specimen.

Some of the criticisms that have arisen concerning this test may be the result of misunderstanding about the solution to be used. It seems to us that the weaker solution of iodine, known as Gram's solution, is preferable to the stronger solution, known as Lugol's.

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**BILIARY SURGERY**

—*Concluded from page 7*

5. Calculous duct surgery carries a high mortality.

6. Incidental appendectomy with ectomy carries no additional risk.

7. Incidental appendectomy with ostomy carries a high mortality.

8. Accidents account for one-third of all deaths.

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# HYPNOTISM

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WE have learned in comparatively recent times that hypnotism is not the mysterious influence of one mind over another, of a strong mind over a weak one, but a simple, natural, psychological operation, viz., that of suggestion; but suggestion plus, that is, suggestion which is more than ordinarily intense, which commands for itself an extra amount of the subject's attention, leaving less than the ordinary amount of it for the activation of his own independent mental operations.

Hypnotism, or suggestion, as a conscious procedure is very old. It probably antedates recorded history. It was much used in ancient times for purposes of religious and medical quackery. The professional magician then, as now, relied on it for much of his effects. The Witch of Endor used it. The savage medicine man, arrayed in his toggery and beating his tom-tom, is practicing hypnotism or suggestion the same as does his professional brother, the civilized quack. And animals practice it: the snake has a well developed technique for charming his victims into helplessness.

Hypnotism or suggestion has two general methods of operation, psychic and sensory. A great orator uses the first when he monopolizes the attention of his audience so that his ideas can easily displace the audience's independent thought. An example of the sensory method is seen in the case of the child playing in the middle of the road, who is hypnotized, that is, has his attention monopolized, by the clang of the gong of the onrushing automobile. And the hen, held firmly on the board floor, with her bill touching the floor, is similarly hypnotized by the white chalk line drawn straight out from her bill.

There are various degrees of hypnotism or suggestion. But even in the higher degrees of it, where the attention of the subject is, or appears to be, completely monopolized, he can usually resist suggestions which are extremely repugnant to him; as, for example, a post-hypnotic suggestion to kill his mother.

Early in the course of my medical education, when I was a hospital intern, I devoted some study to hypnotism, using Bernheim's *Suggestive Therapeutics* as a textbook. This study led to these conclusions: That hypnotism in full dose, that is, to the extent of changing the subject's sense perception (which is a convenient and critical sign), is bad medicine, because it weakens the subject's confidence in the evidence of his senses, on which he depends for the regulation of his practical life. But in small doses, that is, in suggestions that do not command an undue amount of the subject's attention, such as are conveyed by a cheerful manner, an encouraging word and reassurance, it is a valuable and even indispensable remedy.

Part of a discussion before the Section on Medical History of the Kings County Medical Society, Oct. 13, 1939.


## *Clinical Experience With Globin Insulin*

LOUIS BAUMAN (*American Journal of Medical Sciences*, 198:475, Oct. 1939) reports the use of globin insulin in the treatment of diabetes. The preparation used consisted of a mixture of 80 units of insulin per c.c. with native globin in the proportion of 1,000 units of insulin to 38 mg. globin and 3 mg. zinc (as $Zn\ Cl_2$); when used as a suspension it was buffered to a pH of 6.1 with $Na_2\ H\ PO_4$; a clear globin solution at a $pH_4$ was also employed. In experiments on animals this preparation was nontoxic in relatively large and repeated doses; it was found that its action lasted twice as long as ordinary insulin, yet it developed its full activity not much later. In normal human subjects globin insulin injected fifteen hours after the last meal produced a minimum blood sugar in four to six hours. Globin insulin has been used in the treatment of 25 diabetics both adults and children for two years. A single injection is given thirty to forty-five minutes before breakfast; a diet suitable for the age, weight and physical condition of the patient is employed and the insulin adjusted to this diet; the carbohydrate is distributed in varying amounts for each meal according to the effect of the insulin and the severity of the diabetes. It was found that a single daily dose of globin insulin adequately controlled mild and moderately severe cases. In the more severe cases requiring 100 or more units daily, complete control was not always possible throughout the twenty-four hours, but this is also the case with standard insulin given in several doses daily and with a single dose of protamine insulin. In several cases in which protamine zinc insulin failed to control the diabetes, much more satisfactory control was obtained with a single dose of globin insulin. No reactions at the site of injection were observed in any case with globin insulin; also early morning hypoglycemic reactions did not occur, although such reactions may occur with protamine zinc insulin, at a time when insulin shock is easily overlooked and not adequately treated. The author believes that these results warrant further trial of globin zinc insulin "by clinicians especially trained in the management of diabetic patients."


COMMENT

***Further experiments with globin insulin should be made.***

***M.W.T.***

## *Sulfapyridine in the Treatment of Pneumonia*

N. PLUMMER and H. K. ENSWORTH (*Journal of the American Medical Association*, 113:1847, Nov. 18, 1939) report the treatment of 270 cases of pneumococcus pneumonia, either typical lobar or atypical pneumonia, with sulfapyridine. The usual dosage was 2 gm. for the initial dose, followed by 1 gm. every four hours until a total of 16 gm. had been given; in many cases the drug can then be stopped. In some cases, especially if there is bacteremia, the drug is continued usually in a dosage

of 6 gm. a day in divided doses; in a few cases 0.5 gm. every two hours has been given; in others 0.5 gm. every four hours, while occasionally the dose is increased to 1.5 to 2 gm. every four hours. In "a large majority" of the cases there was a marked fall in temperature and in pulse rate within twenty-four hours; there was an associated decrease in toxemia and subjective improvement. Bacteremia was usually promptly controlled. There were 34 deaths in the 270 cases, a mortality of 12.6 per cent.; excluding those cases in which death occurred within twenty-four hours after the beginning of treatment, the mortality was 8.5 per cent. Of the 35 cases with bacteremia, 12 died, 34.3 per cent.; of these 4 died within the first twenty-four hours; excluding these cases, the mortality is 25.8 per cent. Of the 270 cases, 102 were treated with type - specific serum in addition to sulfapyridine, including 22 cases with bacteremia. As a rule serum was used for the more severely ill patients; and it is not possible to determine an exact mortality rate for sulfapyridine alone or for sulfapyridine plus serum. The clinical recovery of a number of patients seemed "more rapid and certain" when serum was used with sulfapyridine, and it seems probable that the use of serum will further reduce the low mortality rate that can be obtained with sulfapyridine. The drug caused some nausea and vomiting in approximately half the cases; vomiting was severe in 35 or 11 per cent.; these symptoms are "almost certainly central in origin"; as a rule the administration of the drug should be continued in spite of vomiting, as this not infrequently lessens as the patient's condition improves. There was a slight fall in the red cell count in a number of patients, but only 2 showed a severe degree of anemia that necessitated withdrawal of the drug; there was no case that showed a tendency to granulocytopenia; and no case with evidence of liver damage. The most serious toxic effects in this series involved the kidney and ureter; there were 2 cases with ureteral stones composed of sulfapyridine, 2 cases of gross hematuria, and 2 cases of microscopic hematuria. In 3 cases the blood urea nitrogen was temporarily elevated, falling rapidly to normal when sulfapyridine was discontinued. In the 34 fatal cases, death occurred within twenty-four hours after treatment was begun in 11 (as noted above); 8 had serious organic disease affecting the cardiovascular system, 2 had been on drinking bouts, one had severe diabetic acidosis and one, uremia on admission; and in 2 other cases the drug was stopped prematurely through error.



COMMENT

*Bedside estimation of the amount of sulfapyridine in the blood by means of a Weston exposure meter has been described by Bullowa. While the method gives only approximate amounts, the photoelectric colorimeter will give more accurate readings.*
*M.W.T.*

## *Range of Normal Blood Pressure*

S. C. ROBINSON and M. BRUCER (*Archives of Internal Medicine*, 64:409, Sept. 1939) report a study of blood

pressure in persons who came for routine periodic examinations provided by their insurance company; the ages ranged from twenty to seventy years, and most of the persons examined "had either no complaints or minor ones." Blood pressure examinations were made in 10,883 persons, 6,458 men and 3,015 women; in addition a study was made of five to ten year continuous records of 500 persons, and of records of deaths at various blood pressure levels. On the basis of these studies, the authors draw the following conclusions: The normal range of systolic blood pressure for men and women is from 90 to 120 mm. mercury and for diastolic pressure from 60 to 80 mm. mercury. Normal blood pressure does not rise with age; a normal person attains "his mature blood pressure" at about the time of adolescence, and maintains that level with minor variations, except for a slight rise about the twentieth year. So-called "hypotension" is not a disease; it rather represents "an ideal blood pressure level"; in the absence of other findings this is true of pressures that occasionally dip as low as 80 systolic and 50 diastolic. Daily and yearly variations of normal blood pressure range from 5 to 10 mm. mercury. Blood pressures at higher levels show greater and more erratic yearly variations. If the blood pressure occasionally goes below 110 systolic and 70 diastolic, it is more nearly normal; if it occasionally dips still lower, to the 90 systolic and 60 diastolic level, this gives added assurance that hypertension will not develop. A history of blood pressure over 120 systolic and 80 diastolic "over a ten year span" in either a man or a woman is "an almost infallible sign of incipient hypertension;" such a pressure "definitely established" rarely becomes normal. Transient elevations of blood pressure also should not be ignored; they are indications that a more permanent rise of pressure and eventually hypertension may develop. High blood pressure, the authors conclude, is "a long term disease having its genesis at an early age"; it does not arise suddenly in middle age. The mortality records show that persons with low blood pressure have the lowest mortality rate; those with blood pressures persistently over 120 systolic and 80 mm. diastolic have a higher mortality rate than those with blood pressures persistently below this level.

COMMENT

***This is an article which should be read in its entirety.***

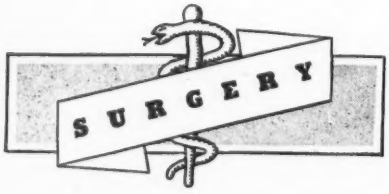
***One of my patients who has a systolic blood pressure of 300 mm. has been in good physical condition for the past twelve years. I feel that it is difficult to establish definite rules; they are always dangerous to follow. When I see how many of my older patients maintain fairly good health for years with blood pressures ranging from 180 to 200 mm., it would seem that a high blood pressure signifies a good circulation. It should be remembered that the diastolic pressure fluctuates as well as the systolic pressure.***

***M.W.T.***

## *The Use of Sulfapyridine in the Treatment of Pneumonia Complicating Pertussis*

L. LITTER, A. M. LITVAK and T. B. GIVAN (*Archives of Pediatrics*, 56:519, Aug. 1939) report the use of sulfapyridine in 22 cases of bronchopneumonia complicating pertussis. The drug was usually given by mouth in doses of 1½ gr. per pound body weight for the first twenty-four hours, then 1 gr. per pound body weight per day, in six daily doses. The administration of sulfapyridine was continued for five to seven days after the temperature subsided. The sulfapyridine was given with alkalizers, such as sodium bicarbonate or Kalak Water; pineapple juice or other fruit jellies or syrups may be used as a flavoring agent when Kalak Water is employed, peppermint water or other aromatic flavoring waters with sodium bicarbonate; for younger children milk diluted with equal parts of Kalak Water may be tried; variation of the vehicle used is desirable. This tends to decrease vomiting. If vomiting was severe so that an adequate amount of sulfapyridine was not absorbed, the drug was given rectally; for rectal administration the normal oral dose was increased by 30 to 50 per cent. Nausea, vomiting and cyanosis occurred in most of the authors' cases, lassitude and dizziness were noted in many of the older children, mild or moderate neutropenia in nearly all cases; 2 cases of sulfapyridine fever were observed; in 3 cases more serious toxic

reactions were observed — hemolytic anemia, scarlatiniform eruption and pleural effusion (which may have been a complication of the pneumonia rather than of the drug). In 13 of the cases treated, the pneumococcus was isolated; 9 of these cases responded favorably to the sulfapyridine, one was not benefited; in the remaining 3 cases toxic reactions made it necessary to discontinue the drug. Of the 9 cases in which the pneumococcus was not demonstrated, 8 responded promptly to the sulfapyridine treatment; only one patient responded poorly. In cases in which the pneumococcus is demonstrated and typed, a type specific serum may be employed supplementary to the chemotherapy, especially for types I, II and III.




### *The McClure-Aldrich Test in Water Balance Following Operation*

H. C. HOPPS and FREDERICK CHRISTOPHER (*Surgery, Gynecology and Obstetrics*, 69:637, Nov. 1939) note that the importance of maintaining a proper water and electrolyte balance and of preventing dehydration in surgical patients is generally recognized. The usual guides for the control of water balance and prevention of dehydration after operation are: The clinical picture; the urinary output; quantitative measures of intake and output: the erythrocyte count; the hemoglobin determination and the blood protein level. But dehydration should not be allowed to advance in surgical patients to the point where definite clinical symptoms develop.

The urinary output is often an excellent guide, but may be untrustworthy if kidney function is impaired. The quantitative measurement of intake and output is so involved a procedure as to be impossible in the average hospital. Other factors than dehydration may affect the erythrocyte count, hemoglobin and blood protein. In 1923 McClure and Aldrich described their test, which was used primarily for the study of edema; it consists in the measurement of the disappearance time of the wheal produced by the injection of normal saline; rapid disappearance of the wheal indicates avidity of the tissues for water. This test has been employed in 7 patients after operation; multiple wheals were made by injection of 0.2 c.c. of a 0.85 per cent. solution of sodium chloride. In all these cases the McClure-Aldrich test was found to be a sensitive and reliable index of the state of hydration; it indicated minor degrees of dehydration that were not evident clinically and was found to be a useful guide for the administration of fluid in optimal amounts, "provided the electrolytic balance was taken into consideration." Although the series of cases studied is too small to be conclusive, it indicates that the McClure-Aldrich test is a valuable adjunct, in association with other methods, in the maintenance of proper water balance in surgical patients.

COMMENT

***Whether or not the test described and discussed in this paper will become of practical value and will merit serious consideration remains to be seen. It would seem that the niceties of procedure in performing the test must be very definitely standardized and meticulously carried out. In conjunction with the evidence brought out by already existing clinical and laboratory methods the results of this test could be confirmatory. At any rate the article arouses added interest in that very important subject—water balance. Many of the postoperative complications become menacing when there is serious disturbance in water balance. Dehydration, demineralization and demoralization, when not recognized early and vigorously combated, result all too frequently in increased postoperative morbidity and mortality. Many factors are involved and I know of no condition which demands more conscientious and close clinical study coupled with intelli-***

*gent discrimination in therapeutic management.*

*T.M.B.*

## *Cellophane As a Wound Dressing*

E. L. HOWES (*Surgery*, 6:426, Sept. 1939) has found that cellophane is an excellent dressing for non-infected wounds. No. 600 plain cellophane with a thickness of 0.0017 inch has been found to be the best grade to use, as thin wrapping cellophane cracks too easily for use in wound dressing. It should be sterilized by autoclaving; sterilizing by antiseptics or by boiling causes crinkling. The cellophane sheet is cut to a rectangle of the desired size at the operating table; the wound and surrounding skin swabbed with ether; the cellophane is then placed directly over the incision and fastened in place with strips of adhesive plaster on all four sides; the adhesive plaster is placed half on the skin and half on the cellophane "sealing down the edges." Small droplets of blood and moisture collect on the inside of the cellophane in the first twenty-four hours, partially obscuring vision; but later this dries off, if adequate hemostasis was secured at the time of the operation, and the incision may be seen through the cellophane dressing. A heat lamp may be applied to the abdomen to aid drying, it also gives comfort to the patient and causes vasodilatation which favors healing. If the collection of moisture is excessive after twenty-four hours, an air vent may be made in one corner of the dressing, covered by a small square of gauze. Excessive collection of fluid was noted only when hemostasis was inadequate or some other technical fault — such as improper approximation of the skin edges—interfered with normal healing processes. Cellophane of the No. 600 grade may be left on the abdomen as long as ten days without cracking; if cracking does occur earlier, it will be after danger of infection from the outside contamination has passed. The advantages of cellophane as a surgical dressing include: The wound is visible so that it may be inspected for evidence of infection without changing the dressing; cellophane does not stick to the wound crust and dressings may be changed without distressing the patient; it is more impervious to external bacterial contamination than gauze; it is "extremely economical." The amount of seepage and hemorrhage occurring during the first twenty-four hours may be seen, and serves as a measure of the perfection of the surgical technique.

COMMENT

***Cellophane in surgery has been used as an impervious sheet covering dressings. The method described in this article is unique. I doubt that it will be accepted very generally as routine procedure. Present methods of wound dressing are pretty well standardized. Patients seem comfortable and surgeons seem to feel that most of the important surgical considerations are met by existing methods.***

***T.M.B.***

## *The Use of Silk in Thyroid Surgery*

J. E. DUNPHY and T. W. BOTSFORD (*Surgery, Gynecology and Obstetrics*, 69:441, Oct. 1939) report 614 thyroidectomies; silk was used as a suture material in 263 of these cases and catgut in 341; 10 cases in which both suture materials were used are excluded. In the cases in which silk was used, suppuration developed in 0.38 per cent., non-suppurative wound complications in 13 per cent. In the cases in which catgut was used suppuration developed in 3.2 per cent. and non-suppurative wound complications in 40 per cent. Suppurative complications were less frequent when drainage was not employed; in the cases in which fine silk was used for suture and the wound closed without drainage, there were no wound infections. Even with the most careful surgical technique results in wound healing were not so satisfactory in the cases in which catgut was used as in those in which silk was used. With the use of silk, tenderness, swelling and induration of the wound rarely developed, and patients were more comfortable; the febrile period and the postoperative stay in the hospital were about three days shorter with silk sutures than with catgut.

COMMENT

*Evidence is accumulating relative to the*

*successful use of silk in operative procedures, particularly in the closure of wounds. The present comparative study of results in thyroid surgery obtained on one hand with the use of silk, and on the other hand with the use of catgut, points conclusively to the superiority of silk.*

*In comment I would direct attention to the fact that to attain the success reported it requires more than the adoption of silk as suture and ligation material. It presupposes the "philosophy" and technic without which the use of silk will be entirely inadequate. I refer, among other factors, to the determination of the proper case for use of silk. The wise selection of silk: material, type, size and preparation. The experience in handling of silk. Delicate and deft manipulation of tissues; absolute hemostasis. Satisfactory anesthesia with complete relaxation; strict asepsis.*

*T.M.B.*

## *The Significance of Lipocaic In Surgery*

L. R. DRAGSTEDT and his associates at the University of Chicago (*Annals of Surgery*, 110:907, Nov. 1939) report experiments on depancreatized dogs which show that these animals are not restored to a normal state by a mixed diet and administration of adequate amounts of insulin and pancreatic juice. Only the feeding of fresh pancreas or certain extracts of pancreas correct this deficiency, which is characterized by progressive emaciation and enlargement of the liver with extensive infiltration of fat. This indicates a disturbance of fat metabolism which the authors believe to be due to deficiency of a second pancreatic hormone to which they give the name lipocaic. They have prepared extracts of pancreas that are free from lecithin and practically free from choline and which prevent these fatty changes, when given orally or subcutaneously, equally well as feeding raw pancreas. The chief clinical application of these findings will probably be in medicine; but in surgery lipocaic may be employed to prevent fatty metamorphosis of the liver in cases in which the pancreas has been extensively destroyed by acute pancreatitis or pancreatic necrosis, or has been extensively removed in the treatment of malignant disease, as in the operation developed by Whipple, Parsons and Mullins (1935) for extirpation of carcinoma of the ampulla, and of the pancreas.

COMMENT

*The significant advance in our knowledge of pancreatic function elaborated in this report of experimental and clinical investigation promises to afford some therapeutic aid in the cases where fatty infiltration of the liver has occurred in patients deprived for one reason or another of pancreatic secretion. It would seem that there has been discovered a second pancreatic internal secretion apart from insulin, which plays an important and perhaps vital role in metabolism. It has been named lipocaic. Cases of fatty metamorphosis of the liver of the type seen by surgeons will be "few and far between," but it is encouraging to know that in such cases a very material aid will be afforded in the use of lipocaic.*

*T.M.B.*

## *The Use of Vitallium as a Material for Internal Fixation of Fractures*

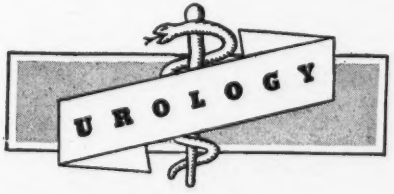
W. C. CAMPBELL and J. S. SPEED (*Annals of Surgery*, 110:119, July 1939) report 65 cases in which vitallium was used in the form of plates or screws, or both, for internal fixation in fractures of various types. Vitallium is a nonferrous alloy, composed of cobalt, chromium and molybdenum. The cases in which vitallium has been employed include 22 cases of acute simple fracture in which satisfactory position of the fragments and good function could not be secured without internal fixation or skeletal traction. Unless there are infected skin lacerations or "brush burns" in the vicinity of the fracture, the authors have found internal fixation with vitallium to give the best results. Complete immobilization and alignment of the fragments were maintained in all cases but one in which the plate broke. This was one of the earliest cases in which vitallium was used, and the plate was brittle; this brittleness of the alloy has since been corrected. In cases in which roentgenograms were made at intervals for a period of ten months, there has been no evidence of absorption of the bone about the screws or of inflammatory changes in the soft tissues. In many instances the callus appeared "to have covered the plate partially." Most of the patients had no symptoms from the plates and do not wish them removed. Plates have been removed in 8 cases,

however, including cases that were infected; in all cases the screws were firmly imbedded and had to be freed with a screw driver; in 2 cases callus had to be removed from over the plate. In 3 cases of "clean" fractures, infection developed; in 2 of these "violation of the rules which govern operation was directly responsible for the infection." In one operation was done too soon after removal of a plaster cast when proper skin preparation was impossible; in the other there were "brush burns" adjacent to the site of operation. In all these 22 cases, including those in which infection developed, union in satisfactory position was obtained. Vitallium plates were also used in 12 cases of delayed union or malunion of fractures; in all of these solid bony union was obtained. In delayed union with malposition, freshening of the ends of the fragments, realignment, and fixation with the vitallium plates gave good results. In malunited fractures, fixation with vitallium is indicated after the deformity is corrected, only when "the quality of the bone is good." With sclerotic bone "of poor quality," an autogenous bone graft is preferable. In "typical nonunion" of fractures bone grafts are also indicated. Vitallium plates have also been employed in acute compound fractures; in these cases sulfanilamide is given prophylactically. In cases seen more than twelve hours after the injury or when there is extensive damage to the soft tissues and the wound grossly contaminated, the Dakin treatment was also employed. In 8 compound fractures seen within twelve hours with little damage to the soft tissues, no infection developed, and the plates have remained *in situ*. In cases with contaminated wounds, mild infection developed, and the plates were removed after union was obtained. In a few cases vitallium plates have been used in the correction of malpositions in old infected compound fractures; sulfanilamide was given for several days before operation. The authors conclude from their experience that vitallium is of definite value as a fixation material for fractures "even in the presence of gross infection."

COMMENT

***This summary of the experience with the use of vitallium in fracture work is informative and instructive. The subject of the treatment of fractures is controversial enough, but in the consideration of the treatment of the complications, i.e., compound fractures, mal-union and non-union, the proponents of various methods of treatment are apt to confuse the practitioner with the variety, complexity and multiplicity of technical details involved. Fortunately in this article the reputation and experience of the authors command confidence in the reader. It is interesting to note reference to the use of sulfanilamide prior to operation on some of these fractures. Many observers are calling attention to the value of administering this drug early in compound fractures as an aid in forestalling dread infection. All in all this reported experience makes a very good case for the use of vitallium in securing internal fixation in fractures.***

***T.M.B.***




### *Hypernephromas too Early to Diagnose*

L. R. WHARTON (*Journal of Urology*, 42:713, Nov. 1939) notes that patients who show occasional or slight hematuria are coming to the physician more frequently than formerly. In such cases the possibility of a hypernephroma as the cause of the bleeding is to be considered, even if no other symptoms suggestive of renal tumor are present. Early diagnosis of hypernephroma is important for successful treatment, as in all other malignant tumors. If "gross pathological disturbances and unmistakable symptoms" have developed, cure is practically impossible. The author has adopted the following principles in the management of such cases; these principles are not "infallible," but practically all survivals in his hypernephroma cases

are found in the group of patients treated according to these principles. In the first place, the diagnosis is often to be based "on the summation of all the clinical data" (including roentgenological findings), instead of any single finding. Secondly, when the evidence indicates the probable diagnosis of renal tumor, exploratory operation is indicated. Thirdly, preoperative irradiation is not indicated, in cases in which the diagnosis is not certain and the operation is exploratory. Fourthly, an exploratory operation is best done by the lumbar route and a small tumor may be safely removed by this route, although the author favors the transperitoneal route when a tumor is clearly present and operation is feasible. Finally, avoid too definite diagnosis on the basis of the roentgenologist's report; the roentgenogram may be negative, showing no filling defect, or it may indicate a benign cyst. In 2 of the 4 illustrative cases reported the roentgenologist's report suggested the diagnosis of benign cyst; in one there was no filling defect, in another "a suggestive deformity" in the next to the highest calyx of the left kidney. Exploratory operation was done in all these 4 cases, and the only one in which an early hypernephroma was not found was this fourth case with the "suggestive deformity" in the urogram. In this case there was an area of softening in the suspected area, and, as biopsy was impossible, the kidney was removed; the softened area proved to be a collection of fat. In this case a course of radiation therapy had been given prior to operation, and added "a confusing factor," as there was a possibility that under treatment the tumor might have liquefied or softened. In the other 3 cases an early hypernephroma was found and nephrectomy done. One of these patients has been operated recently but the other 2 are living and well seven years after operation.

COMMENT

***Blood and pus in the urine are alike in one particular and that is the clinical necessity of tracing each to its source, at the least, and to its cause, at the most. In a large number of cases this objective is more easily stated in theory than reached in practice. The finer the dividing line of diagnosis the greater are the uncertainties even after all the steps in modern work-out have been taken. Consequently the exploratory operation comes into use now exactly as it was in service a generation ago to permit direct examination by the hand and by the eye of organs whose pathological condition was beyond the diagnostics of that time. Wharton is to be commended for having shown the value of exploration of the kidney as a means of heading off the deadly outcome of all hypernephromas, if well advanced into clinical entities.***

*V.C.P.*

## *Supervoltage Radiation in the Treatment of Bladder Tumors*

F. H. COLBY (*Journal of Urology*, 42:538, Oct. 1939) reports the use of supervoltage x-rays in the treatment of 8 cases of malignant tumor of the bladder, employing a million volt x-ray generator recently constructed and installed at the Huntington Memorial Hospital, Boston. The method used for the treatment of bladder tumors is as follows: A daily dose of 400 r units through three alternating portals (10 x 10 cm. or 12 x 12 cm.)—anterior pelvis, posterior left and posterior right; exposure time 5 minutes, 45 seconds; ½ milliamperes of current; filtration 5 mm. lead, half value layer of copper 11 mm.; focal skin distance 70 cm. The total dosage in the 8 cases reported varied from 5,600 to 16,800 r units. Five of the patients had received no previous treatment; in one case fulguration had been done twelve years previously, followed by open operation ten years later. In 2 cases electrocoagulation with permanent cystotomy had been done, followed by some x-ray treatment in one case. In 2 cases marked regression of the tumor took place; in 2 other cases marked or considerable intravesical regression of the tumor; in 3 cases there was little or no relief of symptoms; in one case symptoms were relieved, and there was apparently some regression of the tumor. The author concludes that certain bladder tumors appear to be definitely affected by this form of irradiation; the portions of the tumor that project into the bladder cavity show much more regression than those that have extended into the bladder wall; other tumors are definitely resistant to radiation. The series of cases treated is too small to

evaluate this form of treatment fairly. Local and general reactions are much less than with lower voltages. The author is of the opinion that with circumscribed malignant bladder tumors, operation is the method of choice. Supervoltage radiation is advised only when the tumor is too extensive for operation or there is some other factor that contraindicates operation. Radiation is employed chiefly in debilitated patients with extensive disease.

COMMENT

*Obviously x-ray is coming more and more into its own as a potent means of treating neoplasms situated anywhere in or on the body. In this field the chief differences among new growths are the variations of their response to the x-ray. But, after all, these divergent reactions are just as essential from cancer to cancer as are their widely different malignancies. Workers in x-ray are still not agreed as to the advantages of high-voltage, mass-dosage over low-voltage, divided dosage. In my own work I have always preferred the latter. One great problem is to have the patient understand that, whereas x-ray films require always a few seconds and usually one sitting, x-ray treatments must be given always in several minutes and usually in many sittings. In my bladder work I prefer to add the perineum as a very valuable portal because it is an approach to the growth from below in contrast with the three portals named by Colby which are only from above.*

*V.C.P.*

## *Surgical Treatment of Bilateral Nephrolithiasis*

R. GUTIERREZ (*Urologic and Cutaneous Review*, 43:642, Oct. 1939) distinguishes several types of bilateral nephrolithiasis as follows: 1. Bilateral nephrolithiasis with the stone lying in the pelvis of both kidneys. 2. Staghorn calculus in both kidneys. 3. Stone in both kidneys and stone in one or both ureters. 4. Stone in the upper pelvis of a double kidney and stone in the pelvis of a normal kidney. 5. Stones in polycystic renal disease. 6. Bilateral nephrolithiasis in a horseshoe kidney. In the diagnosis of renal calculus, a plain roentgenogram will often show the number and location of the stones, but a differential renal function test is essential. Where the roentgenogram does not show the calculi or where the shadows may be obscured, a pyelogram is necessary for correct diagnosis. In cases of bilateral nephrolithiasis with stone in the pelvis of both kidneys, operation for the removal of the stones is indicated. The author prefers to operate first on the "better kidney", i.e., the kidney with the better function, pelviolithotomy or nephrolithotomy is done, according to the size and position of the stone. When the patient is fully recovered from this operation, the functional tests are repeated and operation done on the second kidney. If the function of the better kidney is adequate after removal of the stone the second kidney may be removed if nephrectomy is indicated. With modern methods of surgery staghorn calculi, as well as other types of calculi, may be removed from both kidneys. If stones are present in one or both ureters, removal of the ureteral stone sometimes gives relief, and later the stones can be removed from the two kidneys; or if ureteral obstruction is present only on one side and the kidney has been practically destroyed, but the function of the opposite kidney is good, a ureteronephrectomy may be done. Operation is usually not indicated in polycystic kidneys; if, however, there is uncontrollable bleeding from one side, and the function of the opposite kidney is fairly good, a nephrostomy or nephrectomy may be done. All patients should be carefully prepared for operation for removal of renal stones, by the use of indwelling ureteral catheters to promote drainage, and by such general measures as blood transfusions and saline and glucose intravenously and liver extract (in cases with secondary anemia). In cases where the renal pelvis is much dilated or infection is present, preliminary temporary nephrostomy for drainage may be indicated.

COMMENT

*Bilateral stone-formation in the kidneys presents the one great question as to which kidney to relieve first. To-day the better kidney is always operated on first, as a relief of all obstruction, and always given as long a period of rest as possible, as a restoration of its functional capacity. When so rested and restored it is in its best status to accept the burden of operation on the*

*poorer kidney, especially the double duty following removal of it. The reverse procedure might induce anuria, uremia and death by determining a total breakdown of the better kidney as already diseased but not relieved. I recall a female patient from whose right ureter an obstructing stone the size of a child's little finger was removed. After about three months the left kidney was removed in safety although it had been destroyed by 39 stones. The patient lived in fair health for many years.*

*V.C.P.*

### *Combined Wangensteen Suction and Irrigation Apparatus for the Bladder*

H. A. R. KREUTZMANN (*Journal of Urology*, 42:476, Sept. 1939) describes an apparatus for combined suction and irrigation of the bladder, which is a modification of the Wangensteen suction apparatus for continuous bladder drainage. For this purpose the straight end of a Y tube is inserted into the outer end of the urethral catheter; one of the arms of the Y is connected to the Wangensteen suction, the other is connected to a rubber tubing fastened to a Kelly flask, which contains antiseptic solution. Both jars are suspended from a stand by the patient's bed. When the bladder is to be irrigated, the clamp is released from the rubber tubing connected to the Kelly flask to allow the antiseptic solution to flow into the Y tube, while the tubing from the catheter to the suction apparatus is clamped to prevent the fluid from entering both arms of the Y tube and not entering the bladder. When sufficient solution has entered the bladder, the tube to the Kelly flask is clamped, and the tube leading to the suction jar released. In this way frequent bladder irrigations can be given without disturbing the patient. and without danger of introducing infection.

#### COMMENT

*The one great advantage of this method of double irrigation is that it utilizes the indwelling catheter. Thus the procedure avoids frequent penetration of the urethra. The tolerance of the bladder as to pressure, frequency and concentration of the irrigating fluid must be respected. Nothing excites a diseased bladder more than excesses in these three details.*

*V.C.P.*

### *Treatment of Hydronephrosis and Renal Pain by Denervation of the Kidney*

G. BAUER (*Acta chirurgica Scandinavica*, 83:160, Oct. 16, 1939) reports 11 cases in which the chief symptom was pain localized in one kidney; the pain occurred in most cases in "colicky attacks" becoming more and more frequent; in some cases there was a more constant dull pain with repeated acute exacerbations. Careful urologic and x-ray examination showed no stones and no ureteral stenosis, kinks or adhesions; the affected kidney, however, usually showed a hydronephrosis of moderate degree with delayed emptying of the opaque medium from the pelvis or from one calyx. In all cases a typical attack of pain, simulating previous attacks "in every detail," could be induced by the injection of normal saline solution through the ureteral catheter into the pelvis of the affected kidney; the amount of saline solution necessary to elicit this pain varied from 3 to 4 c.c. up to 9 to 14 c.c., according to the capacity of "the more or less dilated pelvis." Ten of the 11 patients were women; and all showed signs of generalized sympathicotonia. In all these cases denervation of the kidney and the upper part of the ureter was done. "Every strand" of nerve fiber and connective tissue was cut away from the renal vessels for a distance of about an inch as far away from the kidney as possible. At operation the fact that there was no mechanical obstruction to the ureter by kinks, adhesions or aberrant vessels was clearly demonstrated, but in some cases strong peristaltic waves were seen to pass down the ureter, while in others the ureter was in a state of "tetanic contraction"; these phenomena ceased when the denervation was complete. All the patients made a good recovery and have been entirely free from pain since operation, in 4 cases for more than a year. In only one case was there any diminution in the rate of secretion of urine by the operated kidney.

#### COMMENT

*Denervation of the kidney and ureter is relatively a new procedure, and, in a by-and-large sense, is certainly attractive to some*

*operators. One may contrast, however, the differences between a major operation and the minor or absent pathology of the kidneys affected. Of the eleven cases of Bauer ten were women, which is at least suggestive of nervous peculiarity and tension. Bauer admits this when he says that all of them had signs of generalized sympatheticotomia. One may ask whether systematic conservative dilatation of the ureters might not act to benefit kidney pain as dilatation of the urethra serves to help bladder pain in some cases. Certainly conservative measures are to be tried with diligence at first.*

*V.C.P.*


## *Basal Metabolism and Serum Cholesterol in Obese Children*

HILDE BRUCH (*American Journal of Diseases of Children*, 58:1001, Nov. 1939) reports determinations of the basal metabolism in 35 boys and 37 girls two to fourteen years old and 20 to 108 per cent. overweight. The Benedict-Roth apparatus was used for these determinations and the basal metabolism rates were calculated on the basis of the standards for standing height and body weight (Talbot) and for surface area (Boothby and Sandiford). The latter calculation gave the lowest rates; the values for standing height "diverged more and more from the calculations for weight and surface area with increasing severity of the condition." The body weight standards gave results closer to the normal area. The total basal metabolism, calculated as calories per twenty-four hours, was higher in this group of obese children than in normal children of comparable height and age. Serum cholesterol was determined in 43 boys and 46 girls more than 20 per cent. overweight; the mean value for total serum cholesterol was 200.3 mg. per cent. with a standard deviation of $\pm 37.9$; the ratio of combined to free cholesterol was $2.60 \pm 0.24$. There was no correlation between the serum cholesterol and the basal metabolic rate. In 2 cases in which thyroid was given, it failed to influence the serum cholesterol or the rate of loss of weight (on dietary control). The author concludes that the determination of basal metabolism as ordinarily carried out is an "untrustworthy guide" in relation to the part played by the thyroid in obesity in children and the indications for thyroid medication; the same is true of the estimation of cholesterol metabolism. Neither furnishes "satisfactory clues as to the nature of the physiological disturbance" in obesity in children.

COMMENT

*Dr. Bruch is to be congratulated for his meticulous study of the basal metabolism and serum cholesterol of obese children.*

*His results definitely show the dangers of thyroid therapy based solely upon metabolic or cholesterol findings, as determined by our present-day technique.*

*The same caution, recommended several years ago by Talbot, still holds good.*

*O.L.S.*

## *Autogenous Vaccine for Asthma in Children*

JEAN CRUMP (*American Journal of Diseases of Children*, 58:768, Oct. 1939) reports the use of an autogenous vaccine in the treatment of 112 cases of asthma in children. The vaccine was prepared from material obtained through the bronchoscope. Bronchoscopic study of a larger series of children with asthma indicated that bronchial infection plays "a more active and more frequent role in asthma in childhood than in adult years." The 112 children with asthma who were treated with autogenous vaccine had all been under observation and treatment for at least six months. The age varied from six months to thirteen years; only 21 were over ten years of age. In 44 cases the asthmatic attacks had begun in the first two years of life; in 24 cases between the ages of two and five years; for 16 children no specific time at which the attacks had their onset could be determined from the information obtained.

The asthma was of less than one year's duration in only 33 cases. The most usual bronchoscopic finding was purulent tracheobronchitis, present in 72 of the 112 cases; definite bronchiectasis was found in 11 cases, evidence of beginning dilatation of the large bronchi in 22 cases. In 20 cases bronchoscopic aspiration of the purulent material and topical applications to the tracheobronchial mucosa were necessary. Cultures of the material removed by the bronchoscope showed mixed infection in most cases; the predominating organisms were nonhemolytic streptococcus and nonhemolytic *Staphylococcus albus*. In 27 cases, the autogenous vaccine was the only treatment used; in the other cases it was combined with desensitization therapy (chiefly house dust and pollen), diet or bronchoscopic procedures. The vaccine was given weekly by subcutaneous injection in amounts gradually increasing from initial doses of 0.02 to 0.05 cc. In some cases one and in others two dilutions of the vaccine were used; the maximum dosage attained was 500,000,000 organisms in some cases, 2,000,000,000 organisms in others, after which the dosage was gradually reduced. An attempt was made to keep the child free from asthma for six months to a year before discontinuing the vaccine. The period of observation of the children under vaccine treatment varies from six months to five years; only 13 children have been under treatment less than a year. Of the 27 cases treated with vaccine alone, 23 have complete relief, one showed great improvement, and 3 doubtful results. In 31 cases treated by house dust desensitization in addition to vaccine, the vaccine may be credited with part of the benefit derived in 17 cases, 13 of which had complete relief. In 68 cases treated by various methods in addition to vaccine 42 obtained complete relief and 13 marked relief. The best results were obtained in cases in which the vaccine treatment was continued for a year. Reactions to the vaccine were observed in 11 cases—of moderate severity in 2 cases, easily controlled with ephedrine in the other cases. When children who were under treatment with vaccine developed colds, they usually did not develop asthma, "reversing the findings reported in their histories." Bronchoscopic study not only made it possible to obtain uncontaminated material for culture and the preparation of the vaccine, but also has a temporary beneficial effect in most cases and is never injurious.

COMMENT

***The results obtained by Dr. Crump clearly call our attention to the role infection plays in asthmatic children.***

***The apparent superiority of the bronchoscopic autogenous vaccines over the autogenous vaccines made from organisms obtained in the nasal pharynx calls for further investigation and use of this type of vaccine in the asthmatic child.***

***O.L.S.***

## *Lead Intoxication in Children*

A. LEVENSON and M. ZELDES (*Archives of Pediatrics*, 56:738, Nov. 1939) note that lead poisoning in infants and children is not frequent, but "it is far more rare and should be taken into consideration in the differential diagnosis of diseases of the nervous system and of the gastrointestinal tract." In most cases in this country the etiological factor is the burning of battery casings; the use of a lead nipple shield or "perverse eating of paint" is only occasionally the cause. In the 26 cases of lead poisoning in children observed by the authors at the Cook County Hospital, Chicago, the majority (17) were Negroes: this is not considered to indicate that Negroes are particularly susceptible to lead poisoning, but that more Negro people use battery casings for heating their homes, because of their poor economic status; 18 of the 26 were over two years of age. In most cases the symptoms on admission were acute, but close questioning of the parents revealed that practically all these children had shown increasing anemia and irritability before the acute symptoms developed. The most frequent symptoms were neurological — convulsions, lethargy and coma; gastro-intestinal symptoms—cramps and vomiting—were less common; a history of constipation was common; only 4 had had diarrhea. Most patients had fever on admission, which subsided later; only 8 showed a gum line, all in the older age groups; optic atrophy was present in 3 cases, all with a history indicating lead

intoxication of long standing. The symptomatology of lead poisoning in children differs from that of adults, as in adults, gastro-intestinal symptoms predominate and the lead line is almost invariably present on the gums. The diagnosis was based on laboratory findings and on a history of lead poisoning in other members of the family. On admission, a correct diagnosis was made in 10 cases on the basis of the family history; a diagnosis of tuberculous meningitis in 3 cases and of encephalitis in 2 cases. Roentgenological examination showed metallic deposits in the long bones in 20 cases; basophilic stippling of the blood cells was present in 18 cases; increased lead in the blood in 12 cases, and in the urine in 7 cases. In 2 cases there was increased lead in the cerebrospinal fluid; in the 16 cases the fluid changes were the same as in any other form of encephalitis, increased cell count and protein. In treatment, large amounts of milk with large doses of calcium were used in some cases; more recently the Shelling treatment with acid sodium phosphate was used in a few cases, with results that indicate that this method may prove superior to the calcium treatment. Also recently patients have been put on a high vitamin C diet with 10 mg. vitamin C given subcutaneously every other day. In the control of the convulsions, calcium lactate intravenously was found to be efficacious. Of the 26 children with lead poisoning, 5 died, 4 during the acute stage, and one a few weeks later; of the 21 that recovered, 9 have been followed up; 3 of these are in good health, although metallic deposits in the bones are demonstrable in 2 of the 3; 2 children complain of frequent headaches but are mentally normal and show no lead deposits in the bones; one of these had a partial optic atrophy. One child has frequent abdominal pain; 2 children had recurrent convulsions three years after the first attack; one is blind, mute and feeble-minded. In 6 of the children who showed symptoms of brain damage, encephalography showed cortical atrophy after the acute symptoms subsided.

### *Nitrogen Metabolism During the Oral and Parenteral Administration of the Amino Acids of Hydrolyzed Casein*

A. T. SHOHL and his associates (*Journal of Pediatrics*, 15:469, Oct. 1939) report the use of hydrolyzed casein, which consists largely of amino acids, as the sole source of nitrogen in infant feeding. The casein preparation used was a powder which was mixed with water and the mixture boiled for five minutes; vitamins A, B, C and D were given as supplements. In the control periods, the infants were given a mixture of evaporated milk, water and karo syrup, the fluid, caloric and nitrogen intakes being approximately the same as with the hydrolyzed casein mixture. "Each infant served as his own control," 6 infants being studied for seven control and ten amino acid food periods. A study of the nitrogen excretion in urine and feces showed that "the nitrogen balances, whether expressed as gross balances per kilogram of body weight, or as per cent of the intake, were indistinguishable on the two types of foods," indicating that the amino acid food maintained a type of nitrogen metabolism very similar to that of ordinary milk mixtures. The same hydrolyzed casein preparation was given intravenously in solution with glucose and sodium chloride, first in a child with tuberculous meningitis; this maintained a positive nitrogen metabolism until death occurred from the meningitis. This amino acid solution was subsequently given intravenously in other cases. "Positive and sufficient nitrogen balances" were maintained in each instance. In most instances, however, the injections caused untoward reactions, especially febrile reactions. These findings indicate that amino acid solutions given intravenously are "a utilizable source of nitrogen," but the cause of the febrile reactions to the injections must be determined and removed if this form of intravenous nutrition is to be clinically useful.

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**Edited by Alfred E. Shipley, M.D., Dr. P.H.**

### *Beck's New Edition*

OBSTETRICAL PRACTICE. By Alfred C. Beck, M.D. Second edition. Baltimore, Williams & Wilkins Company, [c. 1939]. 858 pages, illustrated. 4to. Cloth, $7.00.

The first edition of this excellent textbook met with an enthusiastic reception, and is now in use in a great many of our medical schools. This second edition is still better. New knowledge of the physiology of menstruation, ovulation, lactation, placentation and nutrition finds clinical application. The chapters on abortion, toxemia and complications of pregnancy have been thoroughly rewritten. An excellent bibliography appears at the end of every chapter. The chapter on toxemia is extraordinarily good, in that no space has been wasted in the elaboration of a classification, yet the management of the classical types is clearly indicated.

The success of this book is due as much to the clear smooth conversational style of the teacher as to the numerous simple diagrams which clarify or actually take the place of text. It is unique in that it is a valuable source of information for the practicing physician as well as the medical student. Its unconventional arrangement is very practical. The clinical significance of obstetrics is skillfully and pointedly discussed, and logical sequence maintained. In many textbooks one looks in vain for helpful information on treatment. This book is really practical, and so is heartily recommended to student and practitioner alike.

CHARLES A. GORDON.


### *Classical Quotations*

• It was now observed that the eyes assumed a singular appearance, for the eye-balls were apparently enlarged, so that when she slept or tried to shut her eyes, the lids were incapable of closing. When the eyes were open, the white sclerotic could be seen, to a breadth of several lines, all round the cornea. In a few months, the action of the heart continued with increasing violence, a tumour, of a horse-shoe shape, appeared on the front of the throat and exactly in the situation of the thyroid gland.

**Robert J. Graves.**
Newly Observed Affection of the Thyroid Gland in Females.
**London Med. and Surg. Journal,** 7:516-517, 1835.

### *The Normal and Abnormal Foot*

DISEASES OF THE FOOT. By Emil D. W. Hauser, M.D. Philadelphia, W. B. Saunders Company, [c. 1939]. 472 pages, illustrated. 8vo. Cloth, $6.00.

The frequent occurrence of foot disorders has made the subject increasingly important to the general practitioner. Because of this the author has prepared a comprehensive treatise that would serve both as a basis for understanding the anatomy and physiology of the normal and abnormal foot during the period of growth and development, and as a guide to the treatment of foot disorders as they appear in infancy and as they develop during the period of rapid growth and in adult life.

The book is rather complete, as almost all foot ailments are covered. Such conditions as pes valgoplanus, hallux-valgus, club foot, fractures and dislocations of the foot, peripheral vascular diseases, nervous affections and infections of the foot are described clearly.

*YOU may obtain any of the books reviewed in this department by sending your remittance of the published price to Book Department of the MEDICAL TIMES, 95 Nassau Street, New York, N. Y.*

Separate chapters have been devoted to the consideration of accessory bones of the foot and their clinical significance; to the proper use of foot apparel; and to the care of the foot during pregnancy, as well as following prolonged illnesses. The use of local anesthesia for numerous minor operations on the foot is also described.

The book is not voluminous. It should be valuable to physicians who wish to understand and treat foot ailments.

C. C. VITALE.

### *Sound Sex Hygiene for Adolescent Girls*

ATTAINING WOMANHOOD. A Doctor Talks to Girls About Sex. By George Corner, M.D. New York, Harper & Brothers, [c. 1939]. 95 pages, illustrated. 16mo. Cloth, $1.00.

The author writes on this subject with especial authority on account of his years of study of the reproductive organs of both sexes.

The book is simple, clear, and very well written. A young girl will understand the subject matter thoroughly, and it will teach her all that she should know about her changing life at puberty. There is nothing in the book that a young girl should not be told.

The few illustrations of the male and female sex organs are excellently drawn. The author describes the anatomy and physiology of the reproductive systems in both sexes, and he discusses sex attraction, sex conduct, birth, and a few sex disorders. Parents will do well to allow their girls to read this little volume.

There may be some mothers who prefer to give their daughters verbal instructions in sex matters, if so, the mothers will become better instructors by a careful study of this excellent little book.

WM. SIDNEY SMITH.

### *The Prison Reformer, John Howard*

JOHN HOWARD (1726-1790). Hospital and Prison Reformer: A Bibliography. By Leona Baumgartner, M.D. Baltimore, The Johns Hopkins Press, [c. 1939]. 79 pages. 4to. Paper, $1.00.

John Howard, philanthropist, prison reformer and humanitarian, died in 1790 after a life of selfless endeavor. In 1773 he had been appointed High Sheriff of Bedfordshire, and it was not long before he had become acquainted with the evils of the existing prison system in England. Four years later appeared his report of these conditions, the *State of the Prisons*. It went through many editions and printings. These investigations later led him to study hospitals and various penal institutions in England and on the Continent, and to report his findings in several books.

The present volume is an extremely detailed and meticulous bibliography of his writings compiled by Dr. Leona Baumgartner. It is in the John Fulton tradition of bibliography, and will be exceedingly helpful to anyone interested in John Howard and his work. An introduction by Arnold M. Muirhead giving a compact biographical sketch of Howard adds to the usefulness of the book.

GEORGE ROSEN.

### *Physical Measures in Sinusitis*

RADIOTHERAPY IN SINUSITIS. By W. Annandale Troup, M.D. London, The Actinic Press, Ltd., [c. 1939]. 51 pages, illustrated. 8vo. Paper, 3/6.

The author of this small book is an English specialist in physical medicine. His views on radiation therapy in sinusitis result from an extensive experience in physiotherapy, and are clearly stated. He dwells mainly on the virtues of ultra-violet radiation and the technic of its application. The relative merits of ultra-short wave therapy and infra-red rays are discussed briefly. The chapters on "physiological action of radiotherapy" and on "technique of treatment" are presented in an interesting fashion.

The title is somewhat misleading, to the American reader at least, in the sense that one expects to find some discussion of x-ray therapy in sinusitis.

The author dismisses this form of therapy with a brief statement that it has been used in America and appears to be "too heroic in view of the fact that the simple methods which I have described meet with a large measure of success."

This book delivers an enthusiastic message; however, in the light of fundamental rhinological concepts, the conclusions drawn by the author are not entirely warranted.

RAPHAEL SCHILLINGER.

### *A New Book On Proctology*

THE RECTUM AND COLON. By E. Parker Hayden, M.D. Philadelphia, Lea & Febiger, [c. 1939]. 434 pages, illustrated. 8vo. Cloth, $5.50.

This volume is based on the personal experience of the author augmented by the experiences of a number of his colleagues at the Massachusetts General Hospital. The opinions expressed, as well as the various diagnostic and surgical procedures are sound, and are generally accepted by proctologists in this country.

Twenty-two chapters cover the subject in orderly fashion. The 169 drawings and photographs of armamentarium, diseased conditions, and procedures are unusually well done and clear.

The first chapter, devoted to Anatomy of the Rectum and Colon, is concise and free from non-essentials. In the chapter on Tuberculosis, the author advises wide excision in the treatment of anorectal ulcers, but he does not mention whether or not he uses the cautery. If he does not, the reviewer is in perfect accord with him in this respect. Although the chapter on Malignant Tumors of the Rectum and Colon is the longest in the book, it is both comprehensive and pithy.

The book has a fine index, and is very easy to read.

A. W. MARTIN MARINO, M.D.

### *Another Text On British Therapeutics*

TEXTBOOK OF MEDICAL TREATMENT. By Various Authors. Edited by D. M. Dunlop, M.D., L. S. P. Davidson, M.D. and J. W. McNee, M.D. Baltimore, Williams and Wilkins Company, [c. 1939]. 1127 pages, illustrated. 8vo. Cloth, $8.00.

This new book is the work of various well-known British authors. All medical diseases are covered including diseases of the skin, with a section on psychotherapy and one on technical procedures and oxygen therapy. Explicit directions are presented. The number of drugs recommended is smaller than in many books, especially the English ones where what might be considered polypharmacy is sometimes noted.

The inclusion of such procedures as blood tranfusion, intravenous infusion and lumbar puncture, with an excellent table of the differential findings in spinal fluids in various diseases, is a useful feature of the book. Treatment is covered in a direct and authoritative manner, creating an excellent reference book.

W. E. MCCOLLOM.

### *Latest Report of Matheson Commission On Encephalitis*

EPIDEMIC ENCEPHALITIS. Etiology, Epidemiology, Treatment. Third Report by the Matheson Commission. New York, Columbia University Press. [c. 1939]. 493 pages. 12mo. Cloth, $3.00.

The Matheson Commission has continued in the present publication the important work outlined in the earlier reports. The book is divided into five chapters, preceded by an introduction and followed by an extensive bibliography.

The first chapter refers to the work of the Commission, and the second contains a summary of investigations bearing on the etiology of encephalitis. In addition to the classic epidemic form of the disease, there is also a discussion of the St. Louis type, Japanese B. Encephalitis, post vaccinal encephalitis and post infectious encephalitis, Australian X disease and equine encephalomyelitis. In chapter three are brief descriptions of louping-ill, lymphocytic choriomeningitis and infectious polyneuritis. The following chapter on therapy comprises an appraisal of the methods of treatment which are employed in encephalitis including a short description of the Bulgarian treatment. After reading the list of remedies, one cannot but be impressed with the many which have been tried and the few in which any efficacy is consistently reported.

The chapter on epidemiology is of interest, and the bibliography is extensive, and occupies a considerable part of the volume.

The Matheson Commission is rendering the profession and the public a most helpful service in thus evaluating the present status of the etiology, therapy and epidemiology of this increasingly prevalent disease—epidemic encephalitis.

JOSEPH C. REGAN.

### *Disorders of Personality*

A HANDBOOK OF ELEMENTARY PSYCHOBIOLOGY AND PSYCHIATRY. By Edward G. Billings, M.D. New York, The Macmillan Company. [c. 1939]. 271 pages, illustrated. 16mo. Cloth, $2.00.

This manual is a most up-to-date presentation of psychiatric thought. The first chapter deals with psychobiology. Dr. Billings is a former pupil of Adolf Meyer, and throughout the book the influence of Meyer and his concepts are to be discerned. This part also is not easy to follow—not that the thought is particularly profound, but that the manner of presentation is at times obscure. It will require reading and re-reading to get the thought the author desires to convey. We are not dealing here with individual organs and their functions, but solely with man as an articulate whole —an integer. Both somatic functions and mental reactions fused together make up the individual in *toto*. As such he conceives, calculates, feels and carries out his various activities, all having the primary aim of functioning as a unit.

To read the chapter on the psychiatric examination of patients is a painstaking and laborious procedure but of inestimable value to all who want a broad view of psychiatry, and are not satisfied with a superficial acquaintance only. A long chapter is devoted to the description of the individual mental diseases. A brief chapter takes up the subject of psychotherapy. This is a thankless job, for we have little to offer, say, to those with manic-depressive reactions. The author adheres strictly to Meyer's nomenclature (ergasias).

JOSEPH SMITH.

### *Injection Therapeutics*

SCLEROSING THERAPY. The Injection Treatment of Hernia, Hydrocele, Varicose Veins and Hemorrhoids. Edited by Frank C. Yeomans, M.D. Baltimore, Williams & Wilkins Company. [c. 1939]. 337 pages, illustrated. 4to. Cloth, $6.00.

This text is devoted to the injection treatment of hernia, hydrocele, varicose veins and hemorrhoids. The four subjects are considered by four separate authors. Although sclerosing therapy has been uniformly accepted by the profession in some of the subjects considered by the contributors, in others it has not as yet received the approval of the leaders. For this reason, it is difficult to lend universal approval to all parts of the book. However, one may state that the entire matter is presented by each advocate in an efficient manner with orderly procedure, including not merely the therapy but the anatomical and pathological basis for the therapy.

For one who would be informed as to the last word in sclerosing modalities the book may be recommended.

ROBERT F. BARBER.

### *A Physician's Biography*

FIFTY YEARS A DOCTOR. By Dr. John Kercher. Boston, Meador Publishing Company, [c. 1939]. 247 pages, illustrated. 8vo. Cloth, $2.00.

The author is revealed in these memoirs as an amiable doctor of the old school who, during the course of his long practice, has encountered these experiences which he recounts with more gusto than literary skill. There are numerous typographical and grammatical errors. The book would have profited by better proof reading and the services of a ghost writer.

MILTON PLOTZ.

### *Oral Diseases*

DISEASES OF THE MOUTH AND THEIR TREATMENT. A Text-book for Practitioners and Students of Medicine and Dentistry. By Hermann Prinz, M.D. and Sigmund S. Greenbaum, M.D. Second edition. Philadelphia, Lea and Febiger, [c. 1939]. 670 pages, illustrated. 8vo. Cloth, $9.00.

The exhaustion of the first edition so quickly results in a thorough revision of the entire text. A new chapter on lymphadenitis has been added, together with articles on Paget's disease (Ostetitis deformans), Schuller-Christian disease, hereditary pseudohemophilia, sarcoidosis, and numerous others amounting to some 65 odd pages.

This book constitutes one of the best all-round reference works, not alone for the practitioner of dentistry, but for the medical practitioner as well. It covers

the Embryology and Anatomy of the Oral Cavity, Symptomatology of General Disturbances within the Oral Cavity, Oral Manifestations of Local Origin, and very important to the medical practitioner is the chapter on Oral Manifestation of Metabolic Disturbances, of Blood Dyscrasias, of Avitaminoses and of the Ductless Glands. The chapter on tumors and cysts of the oral cavity is, as in the first edition, well illustrated. The excellent cross reference indexing makes the location of information desired very easy.

LAWRENCE J. DUNN.

### *The New Stedman*

STEDMAN'S PRACTICAL MEDICAL DICTIONARY. By Thomas L. Stedman, M.D. and Stanley T. Garber, M.D. Fourteenth edition. Baltimore, Williams and Wilkins Company, [c. 1939]. 1303 pages, illustrated. 8vo. Cloth with thumb index, $7.50.

For twenty-eight years this dictionary has enjoyed wide acceptance as an authority on medical orthography, etymology and lexicographic details. The present edition takes due account of the numerous additions to the language of medicine. The plates, tables and illustrations are excellent and adequate, and the Oath of Hippocrates as a frontispiece is an attractive feature, appropriately beginning the work on an early note, just as it ends with the "last word," namely, the Basle anatomical nomenclature. This dictionary will continue to occupy its old place among the physician's "must" volumes.

ARTHUR C. JACOBSON.

### *Psychological Pediatrics*

THE CLINICAL TREATMENT OF THE PROBLEM CHILD. By Carl R. Rogers. Boston, Houghton Mifflin Company, [c. 1939]. 293 pages. 8vo. Cloth, $3.00.

This book is written to present the variety of methods used in the clinical treatment of problem children. The author is a psychologist who has had experience with such problem children.

The work is divided into four parts:

Part I—Ways of understanding the child. This is composed of a series of chapters devoted to diagnosis and understanding of behavior problems.

Part II—Change of environment as treatment. Here are discussed methods of therapy which depend on a radical change of environment, such as foster home care, or institutional placement.

Part III—Treatment through modifying the environment.

Part IV—Dealing with the individual.

The last two sections deal with treatment of the individual through modifying his environment, such as working through his home, school, camp, club, and other groups. Finally, through interviews, play-techniques, and psychoanalysis an attempt is made to deal with the child directly.

There are selective bibliographies at the end of the various chapters.

The book shows evidence of thoughtful planning. It should be enjoyed by those interested in the subject.

STANLEY S. LAMM.

### *Walker's Skin Diseases*

AN INTRODUCTION TO DERMATOLOGY. By Norman Walker, M.D. and G. H. Percival, M.D. Tenth edition. Baltimore, The Williams & Wilkins Company, [c. 1939]. 391 pages, illustrated. 8vo. Cloth, $7.00.

In the forty years since the first edition of this book appeared, dermatology has changed from an infant specialty to a full grown branch of medicine. This, the tenth edition, has kept pace with the growth of dermatology, and as ever is notable for the concise but full coverage of all subjects within its scope.

It is a book to be recommended to the medical student or general practitioner as a handy reference book which covers the subject but still is not so large as to make looking up a dermatological condition a time consuming task.

J. C. GRAHAM.

### *Popular Allergy*

WHAT'S YOUR ALLERGY? By Laurence Farmer, M.D. and George T. Hexter. New York, Random House, [c. 1939]. 234 pages. 8vo. Cloth, $2.00.

This book of 230 pages presents a scientific discussion of the subject of allergy designed especially for the lay reader. An introductory chapter on the history of allergy, is followed by a rather extensive review of the experimental work relating to anaphylaxis. This chapter may present many difficulties to the lay reader. Dr. Farmer is "strongly of the opinion that allergy is in essence merely human anaphylaxis." The various allergic diseases and their diagnosis and

treatment are discussed. A chapter on allergens, which should prove of interest to the allergic patient, is included.

The book is full of medical anecdotes and case histories, often humorously presented, which tend to make the subject matter more readable.

MAX HARTEN.

## BOOKS RECEIVED

*for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.*

INJECTION TREATMENT OF VARICOSE VEINS AND HEMORRHOIDS. By H. O. McPheeters, M.D. and James K. Anderson, M.D. Second edition. Philadelphia, F. A. Davis Co., [c. 1939]. 323 pages, illustrated. 8vo. Cloth, $4.50.

PRACTICE OF ALLERGY. By Warren T. Vaughan, M.D. St. Louis, C. V. Mosby Company, [c. 1939]. 1082 pages, illustrated. 4to. Cloth, $11.50.

DISEASES OF THE SKIN. By Richard L. Sutton, M.D. and Richard L. Sutton, Jr., M.D. Tenth edition. St. Louis, C. V. Mosby Company, [c. 1939]. 1549 pages, illustrated. 4to. Cloth, $15.00.

THE MERCK INDEX. An Encyclopedia for the Chemist, Pharmacist, Physician, Dentist and Veterinarian. Fifth edition. Rahway, N. J. Merck & Co. Inc., [c. 1940]. 1060 pages. 8vo. Cloth, $3.00.

WHAT'S YOUR ALLERGY? By Laurence Farmer, M.D. and George J. Hexter. New York, Random House, [c. 1939]. 234 pages. 8vo. Cloth, $2.00.

MISS SUSIE SLAGLE'S. By Augusta Tucker. New York, Harper & Brothers, [c. 1939]. 332 pages. 8vo. Cloth, $2.50.

TEXTBOOK OF NERVOUS DISEASES. By Robert Bing. Translated by Webb Haymaker. Fifth edition. St. Louis, C. V. Mosby Company, [c. 1939]. 838 pages, illustrated. 4to. Cloth, $10.00.

SYNOPSIS OF PEDIATRICS. By John Zahorsky, M.D. Third edition. St. Louis, C. V. Mosby Company, [c. 1939]. 430 pages, illustrated. 12mo. Cloth, $4.00.

PSYCHOBIOLOGY AND PSYCHIATRY. A Textbook of Normal and Abnormal Human Behavior. By Wendell Muncie, M.D. St. Louis, C. V. Mosby Co., [c. 1939]. 739 pages, illustrated. 8vo. Cloth, $8.00.

CANCER OF THE LARYNX. By Chevalier Jackson, M.D. and Chevalier L. Jackson, M.D. Philadelphia, W. B. Saunders Company, [c. 1939]. 309 pages, illustrated. 8vo. Cloth, $8.00.

MAN AGAINST MICROBE. By Joseph W. Bigger, M.D. New York, The Macmillan Company, [c. 1939]. 304 pages, illustrated. 8vo. Cloth, $2.50.

OSTEOARTHRITIS. An attempt to elucidate the aetiology and pathogenesis of the condition by clinical study and analysis. By Ernest Fletcher, M.B. [Reprinted from "The British Journal of Rheumatism." October, 1939.] London, The Author, 71 Harley Street, W. 1, [c. 1939]. 52 pages. 8vo. Paper.

THE PHYSIOLOGICAL BASIS OF MEDICAL PRACTICE. A University of Toronto Text in Applied Physiology. By Charles H. Best, M.D. and Norman B. Taylor, M.D. Second edition. Baltimore, Williams & Wilkins Co., [c. 1939]. 1872 pages, illustrated. 8vo. Cloth, $10.00.

A MANUAL FOR DIABETIC PATIENTS. By W. D. Sansum, M.D., Alfred E. Koehler, and Ruth Bowden, B.S. New York, The Macmillan Company, [c. 1939]. 227 pages, illustrated. 8vo. Cloth, $3.25.

THE FLOWERING OF AN IDEA. A Play Presenting the Origin and Early Development of the Johns Hopkins Hospital. By Alan M. Chesney. Baltimore, Johns Hopkins Press, [c. 1939]. 86 pages. 8vo. Cloth, $1.50.

EPIDEMIOLOGY IN COUNTRY PRACTICE. By William N. Pickles, M.D. Baltimore, Williams and Wilkins Company, [c. 1939]. 110 pages, illustrated. 8vo. Cloth. $2.50.

THE CHALLENGE OF ADOLESCENCE. By Ira S. Wile, M.D. New York, Greenberg Publisher, [c. 1939]. 484 pages. 8vo. Cloth, $3.50.

GYNECOLOGIC OPERATIONS AND THEIR TOPOGRAPHIC-ANATOMIC FUNDAMENTALS. By Prof. Dr. Med. Heinrich Martius. Authorized English translation under the editorial supervision of W. A. Newman Dorland, M.D. Chicago, S. B. Debour, Publishers, [c. 1939]. 486 pages, illustrated. 4to. Cloth, $10.00.

ANESTHESIA. Narcosis, Local, Regional, Spinal. By A. M. Dogliotti, M.D. Authorized English Translation by Carlo S. Scuderi, M.D. Chicago, S. B. Debour, Publishers, [c. 1939]. 680 pages, illustrated. 4to. Cloth, $7.50.

FOOT ORTHOPAEDICS. By Otto N. Schuster, Pod.G. Second edition edited by Maurice J. Lewi, M.D. and Herman Scheimberg, M.Cp. Albany, J. B. Lyon Company, [c. 1939]. 525 pages, illustrated. 8vo. Cloth.

THE ELECTROCARDIOGRAM AND X-RAY CONFIGURATION OF THE HEART. By Arthur M. Master, M.D. Philadelphia, Lea & Febiger, [c. 1939]. 222 pages, illustrated. 4to. Cloth, $6.50.

THE SURGERY OF INJURY AND PLASTIC REPAIR. By Samuel Fomon, M.D. Baltimore, Williams & Wilkins Company, [c. 1939]. 1409 pages, illustrated. 4to. Cloth, $15.00.

PRINCIPLES AND PRACTICE OF AVIATION MEDICINE. By Harry G. Armstrong, M.D. Baltimore, Williams & Wilkins Company, [c. 1939]. 496 pages, illustrated. 8vo. Cloth, $6.50.

THE NEW INTERNATIONAL CLINICS. Original Contributions: Clinics; and Evaluated Reviews of Current Advances in the Medical Arts. Edited by George M. Piersol, M.D. Volume IV, New Series Two. Philadelphia, J. B. Lippincott Co., [c. 1939]. 339 pages, illustrated. 8vo. Cloth, $3.00.

Medical Times

# Dietetic Digest

*THE increased importance of the field of nutrition has prompted a review of the progress of the medical sciences in dietetics and nutrition. Each month in these pages is presented the current literature in this field, abstracted by*

**Madeline Oxford Holland, B.Sc., M.Sc.**

## *Calcium and Phosphorus Functions*

REED in the Journal of the *American Dietetic Association* (15, 667 (1939) 8) lists the following functions of calcium and phosphorus:

*Calcium*

1. Bone formation involving almost all the total store. Except for dental enamel, bone is not fixed and constant, but undergoes decomposition and resting necessary in the rapid replacement of constituents.
2. Decrease in membrane permeability and antagonism of Sodium and Potassium ions by Calcium ions. Unless checked by Calcium ions the Sodium and Potassium ions in increasing permeability, increase the life of tissues, allowing the destructive metabolism rate to rise to dangerous conditions.
3. Transformation of chemical energy into muscular contraction, since it greatly augments the force of contraction.
4. Transporting of nerve impulses from one neuron to another by a not clear mechanism.
5. Blood clotting process.
6. Maintenance of water balance, probably by osmotic action.
7. Coordinated functioning of heart.

*Phosphorus*

8. Regulation of acid, in that base reactions act as buffers in fluids and tissues.
9. Process of muscular contraction in combination with carbohydrates as Hexose Phosphate. It is also involved in absorption of fat and carbohydrates from the intestines and the resorption of Glucose in the renal tubules.
10. Propagation of nerve impulses and source of energy of muscle contraction as phosphocreatine.

## *Molasses as Iron Source*

HARRIS, Mosher and Bunker in the *American Journal of Digestive Diseases* (*VI*, 459 (1939) 8) suggest molasses as a rich and inexpensive source of iron in nutritional anemia.

Determined by chemical procedure, the dipyridyl method, the iron in three grades of commercial molasses purchased in the market, was found to be: (A), 97%; (B), 85%; and (C), 54% respectively. The percentages were slightly lower when tested by the biological method: 90%, 80% and 50% respectively.

Although the iron in (A), the high-grade molasses, was more available (3.1 mg./100 gm.), (B) showed more total available iron (5.1 gm./100 gm.)

According to one of Sherman's tables, liver is the only food comparing favorably with molasses as a source of iron, molasses being superior to all the common foods high in iron content.

## *Vitamin C in Urticaria*

ACCORDING to a review in the *Prescriber* (*32*, 319, (1938) 10) Rosenberg upon examining the blood in a number of cases of urticaria found a deficiency of vitamin C. Citrus fruits, such as lemons and oranges, when adminis-

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**Each Hematinic Plastule Plain provides five grains of *ferrous* iron available for immediate conversion into hemoglobin.**

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tered were found to be of therapeutic value. He concluded that vitamin C in certain cases of urticaria is an etiological factor.

Caven reports that sensitivity to wheat, eggs and milk was benefited by administration of small doses of insulin.

Sixty grains daily of potassium chloride with a high protein, low-sodium, acid-ash diet were found to lower cutaneous irritability in six cases of urticaria which would not respond to any other treatment.

### *Intestinal Intoxication*

ACCORDING to Lieb and Chapman in the *Review of Gastroenterology* (5, 306 (1938) 4) "intestinal intoxication" appears to be the result of pathologic changes initiated in the nasal and oral cavities, aside from effects due to anatomic considerations.

The toxi-infections material may affect the gastrointestional tract directly and indirectly. Direct mechanisms include swallowing of bacteria or their toxins, thereby producing infection, intoxication, or sensitization of the gastrointestinal mucosa. Indirect mechanisms include disturbances of the sympathetic-parasympathetic balance, endocrine dysfunction, anoxemia, malnutrition, etc.

These factors appear to be closely interrelated. The type of pathologic condition produced may depend upon the relative prominence of the different phases of this complex mechanism.

The application of simple in vitro methods for indicating the pathogenuity of streptococci and staphylococci has been of inestimable value in the bacteriologic studies upon which these conclusions were based.

### *Vitamin Requirements*

MUNSELL in the *Journal of the American Dietetic Association* (15, 639 (1939) 8) presents the following table of daily vitamin requirements:

| *Vitamin* | *For Average Adult Under Average Conditions* | | | *During Pregnancy and Lactation* | *For Growing Children and Adolescents* |
|---|---|---|---|---|---|
| | *Absolute Minimum* | *Adequate* | *Optimum* | | |
| A | 2000 I.U. | 3000-5000 I.U. | 6000-8000 I.U. | more | 8000-10,000 I.U. |
| $B_1$ Thiamine hydrochloride | 200 I.U. | 300-400 I.U. | 500-600 I.U. | Several times the allowance for adults | Considerably more in proportion to weight than adults |
| C Ascorbic Acid | 20-25mg. or 400-500 I.U. | 40-50mg. or 800-1200 I.U. | 80mg. or 1600 I.U. | Two times that for non-pregnant woman. | Only slightly less than for adults |
| D | Unknown | Unknown | Unknown | 800 I.U. suggested as adequate | 300-400 I.U. suggested as adequate protection against Rickets. 675 I.U. suggested as desirable to assure optimum growth |
| G Riboflavin | Approximately 600 Bourquin-Sherman Units | | | | At least 400 Bourquin-Sherman Units |

When estimating the amounts of foods for the daily diet in order to supply the proper amount of vitamin, the possible decrease in the content due to the foods'

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When you prescribe for Betty Jane or Mary of the average family, you may have just as finicky a taste to consider as if your prescription were intended for the Queen. Disagreeable "medicine" makes disagreeable children if, over their determined objections, it can be forced down their throats at all.

Truly fit "to the Queen's taste" is LORAGA, yet this plain mineral oil emulsion is not disguised by artificial flavoring. There is no oily after-taste. But Loraga not merely caters to the exacting palate of adult or child—it is a fine emulsion that mixes well with the intestinal contents, softens and lubricates the mass so that evacuation may not be delayed and may take place without straining.

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preparation for eating must be considered and adjusted.

The Vitamin foods classified as types are:

1. Excellent sources (from 15,000 I.U./100 Gm. of fresh edible portion) of Vitamin A are thin green leaves with other green and yellow vegetables about 1000-5000 units/100 Gm.
2. Good sources of Vitamin $B_1$ are raw vegetables (50 units per 100 Gm.)
3. For Vitamin C, citrus fruits.

*Foods Grouped for Vitamin Value According to Food Types*

| *Food Group* | *A* | *$B_1$* | *C* | *Riboflavin* |
|---|---|---|---|---|
| Vegetables except as noted below | Bleached 0 | 50 | 200 | 40 |
| | Others trace to 1000 according to green or yellow color | | | |
| Thin green leaves | 15,000 | | 800 | 150 |
| Other green leaves | 1000-5000 | | 800 | 90 |
| Yellow types | According to depth of color | | | |
| Cabbage family—Cabbage, Brussel Sprouts, Cauliflower, Collards, Broccoli. | | | 1200 | |
| Roots—Kohlrabi, Turnips, Rutabagas | | | 800 | |
| Fruits except as noted below | Low unless green or yellow | 30 | 200 | 25 |
| Apricots, Guavas, Mangoes, Prunes | 1000 | | | |
| Citrus (grapefruit, oranges, lemons, limes, tangerines) | | | 850 | |
| Tomatoes | | | 450 | |
| Seeds dry grains | 0 | 100 | 0 | 25 |
| Legumes, peas, beans, soybeans | Variable according to greenness | 150-200 | 0 | 100 |
| Nuts | Less than 100 | 150-200 | 0 | 100 |
| Meats | | | Cooked 0 | |
| Muscle except as noted below | Less than 100 | 50 | | 125 |
| Pork | | | 250 or more | |
| Liver | 6000 or more | 100 | | 600 |
| Other Organs | | 75 | | 300 |
| Eggs | 1000 | 30 | 0 | 140 |
| Milk and Milk Products | | | | |
| Whole | 100 | 25 | fresh 3 | 60 |
| Skimmed | 10 | 25 | | 60 |
| Butter | 2400 | 0 | | |
| Cheese | According to fat content | | | 250 |

## CARDIOVASCULAR SYPHILIS

The best way to treat cardiovascular syphilis is to prevent its occurrence by adequate, thorough and intelligent treatment in the primary stages of this disease.

—Aaron E. Parsonnet, M.D., F.A.C.P., in *Urol. and Cutan. Review*, January, 1939.

# he NEW, MPROVED Ovaltine!

*. . . richer than ever before in Vitamins A, $B_1$, D and G; Calcium, Phosphorus and Iron! Supplies "quality" proteins and quickly-absorbable carbohydrates. Highly digestible. Makes milk easier to digest. Aids in digestion of starchy foods*

In addition to its other properties . . . Ovaltine has always been a source of Vitamins A, $B_1$, D and G; Calcium, Phosphorus and Iron. *Now it has been enriched to make it an even more important "carrier" of these essential vitamins and minerals.*

Thus Ovaltine—more than ever before—helps to fill "gaps" in the American dietary. Its fortification is in line with recent advances in nutritional knowledge . . . and is an important step in the movement toward an optimum American diet!

### *"Average" diets often deficient*

The so-called "average" diet is frequently deficient in one or more of the important protective elements. The new, improved Ovaltine provides real help to the physician and dietitian in combating these deficiencies. It is designed to fortify the diet *especially* in those elements most likely to be lacking.

Three servings of Ovaltine daily—made with milk according to directions—supplies the minimum daily requirement of Vitamins $B_1$ and D, Calcium and Phosphorus, and from a half to three-quarters of all the Vitamins A and G and Iron that the average person needs.

It also contributes complete proteins, readily-absorbable carbohydrates and fats in a high degree of emulsification. Its diastatic properties aid in the digestion of starches. Its power to make milk more digestible is also important.

And, as you well know, Ovaltine is extremely digestible, even by those who cannot tolerate ordinary foods.

### *A valuable "protecting" food-drink*

The new, improved Ovaltine is a valuable "protecting" food-drink for *convalescents, elderly people, children (especially those who are underweight and nervous), expectant and nursing mothers and everyone who is underweight, under-par and in need of building up. It is an ideal mealtime drink for those who are denied tea and coffee.*

Why not recommend it more often? Your patients will find it delicious . . . and it is very easy to prepare.

*A request over your signature to OVALTINE, Dept. MT-2, 360 N. Michigan Ave., Chicago, will bring you a free full-size can of the new, improved Ovaltine. Write today.*

## Helps fill "Gaps" in the American Diet . .


### *1940 Census Will Bring Valuable Vital Statistics*

WHILE the inventors of diabolic instruments of war have been ingeniously practicing their craft, the scientific forces engaged in preservation of life have made even greater progress. Records of the U. S. Bureau of the Census indicate that depletion of population by deaths on the battlefields is of relatively small account, when balanced against the results of the less publicized but equally dramatic contributions to the prolonging of human lives now being made by medical science.

It is possible, through Census records, to make interesting comparisons, for example, of death rates prevailing around 1900 and those of today. If the 1900 figures still governed, over 450,000 more deaths would occur this year in the United States than actually will take place.

✚

### *Workmen's Compensation*

OF approximately 22,000 physicians licensed to practice medicine in New York State, 18,242 are now authorized to practice in workmen's compensation cases. During the first 10 months of 1939, 1,107 physicians were newly authorized. The number of authorized physicians has increased yearly from 14,031 in 1936, the first calendar year after the Compensation Medical Practice Act became effective on July 1, 1935. The increase in 1937 was 1,907, and in 1938 it was 1,197. In the Metropolitan District, which includes Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk and Westchester Counties, 12,384 physicians are authorized.

*—Continued on page XII*